webster

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April 7, 2004

27-23519.001

BROWN AND CALDWELL

ORIGINAL

Mr. Donald Webster
USEPA Region 4
Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303

RE: Grenada Manufacturing, LLC
Draft HSWA Permit and Draft Statement of Basis

Dear Mr. Webster:

On behalf of ArvinMeritor, Brown and Caldwell has reviewed three draft documents that you provided to Grenada Manufacturing and ArvinMeritor for comment. The three documents reviewed are the draft updated Hazardous and Solid Waste Amendments (HSWA) Permit, the draft Statement of Basis, and the draft Fact Sheet. Attached for your consideration are redline versions of each of these documents with comments and proposed revisions.

Please note that our proposed comments focus primarily on the Statement of Basis and the Fact Sheet. However, as I am sure you are aware, the same information is used in multiple documents and, therefore, in some instances our comments are repetitive. For example, the first two pages of the Statement of Basis are very similar to the Fact Sheet and many of our comments are the same for both. In addition, Appendix A to the Statement of Basis is repeated as an appendix to the draft HSWA Permit and our comments apply to both. Lastly, please note that while we have not provided any comments on the draft radio announcement, ArvinMeritor is in the process of having it reviewed by its communications department and, therefore, comments may be proposed in the future.

We appreciate the opportunity to review and comment on these documents. If you have any questions, please feel free to contact me at (615) 250-1241.

Sincerely,

BROWN AND CALDWELL

Dale R. Showers, P.E.
Senior Project Manager

cc: John Bozick, ArvinMeritor
Don Williams, Grenada Manufacturing

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HSWA PORTION OF THE RCRA PERMIT

OWNER/OPERATOR: Grenada Manufacturing LLC
635 Highway 332
Grenada Mississippi 38901

EPA I.D. No. MSD0070372

Pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, Section 6901 et seq., and the Hazardous and Solid Waste Amendments (HSWA) of 1984, P.L. 98-616, and regulations pron thereunder by the U.S. Environmental Protection Agency (EPA) (codified and to be codified in Title 40 of the Code of Regulations), a permit is issued to Grenada Manufacturing (hereafter called the Permittee), who owns and operates a hazardo facility located Grenada, Mississippi, at latitude 30°48'16" and longitude 89°47'30.

This Permit, in conjunction with the Hazardous Waste Management Permit issued by the State of Mississippi constitutes the ful Permit for this facility. The Permittee, pursuant to this permit, shall be required to investigate any releases of hazardous hazardous constituents at the facility regardless of the time at which waste was placed in a unit and to take appropriate correcti for any such releases. The permit also requires the Permittee to comply with all land disposal restrictions and air emission st applicable to this facility.

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions containe (including those in any attachments) and applicable regulations contained in 40 CFR Parts 260 through 264, 266, 268, 270, an specified in the permit and statutory requirements of RCRA, as amended by HSWA. Nothing in this permit shall preclude the F Administrator from reviewing and modifying the permit at any time during its term in accordance with 40 CFR §270.41.

This permit is based on the premise that information and reports submitted by the Permittee prior to issuance of this permit are Any inaccuracies found in this information or information submitted as required by this permit may be grounds for termin modification of this permit in accordance with 40 CFR §270.41, §270.42, and §270.43 and potential enforcement actio Permittee must inform EPA of any deviation from or changes in the information in the application which would affect the Pe ability to comply with the applicable regulations or permit conditions.

The authority to perform all actions necessary to issue, modify, enforce, or revoke this permit has been delegated by the F Administrator to the Waste Management Division Director.

This permit is effective _____2004, and shall remain in effect for 10 years until _____2014, unless revoked and reissued, or terminated under 40 CFR §270.41 and §270.43 or continued in accordance with 40 CFR §270.51(a). All obligations for performance of HSWA provisions required under this permit are in effect until deemed complete by the Regional Administrator.

If any conditions of this permit are appealed in accordance with 40 CFR §124.19, the effective date of the conditions determin stayed in accordance with 40 CFR §124.16 shall be determined by final agency action as specified under 40 CFR §124.19.

_____2004
Issued Date

Winston A. Smith, Director
Waste Management Division

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PREAMBLE

This permit is being issued for the Remedy at Grenada Manufacturing. This is the second Hazardous and Solid Waste Amendment [HSWA] permit issued to the facility, the first was issued July 31, 1998. Under the facility's first HSWA permit issued, the facility underwent HSWA Corrective Action for prior releases of hazardous waste, including hazardous constituents from various Solid Waste Management Units [SWMUs]. The RCRA Facility Assessment [RFA] in 1997 identified 26 SWMUs and 3 Areas of Concern [AOCs]. Subsequently, one more SWMU, the Chrome Plating Line, was identified in 2002. Interim Measures [IMs] for the Site were required by EPA Region IV in year 2000. EPA requested that the facility immediately address site-wide groundwater contamination, as well as source removal and soil contamination for the highest priority SWMUs and AOCs. In year 2003, EPA called for a final Corrective Measures Study [CMS] that would encompass the site-wide remedy. The facility responded with a Corrective Measures Study report wherein the alternatives and the remedy for the entire site were presented. This document is entitled: Corrective Measures Study Report Grenada Manufacturing, L.L.C. Grenada, Mississippi. It is administratively a part of this permit; as are the RCRA Facility Assessment, the RCRA Facility Investigation Report, the Interim Measures Study Report, the Indoor Air Monitoring Report, and the Design Basis Report for the corrective measures.

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The facility also has a RCRA permit for regulated units [RUs] from the Mississippi Department of Environmental Quality [MDEQ]. Earlier investigative and remedial work was conducted under an Administrative Order on Consent issued by MDEQ, and the State's RCRA permit. RCRA corrective action at a number of regulated units has impacted the overall cleanup at the entire facility [regulated units are also listed as SWMUs]. Significant control measures have been implemented at the following areas or regulated units:

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Free-product recovery at AOCs A and B;
Free-product recovery at MW-2 located adjacent to the Sludge Lagoon, an RU, also known as SWMU 4;
Closure of the former Equalization Lagoon, an RU, also known as SWMU 2;
Removal action at the On-Site Landfill, an RU also known as SWMU 3;
Ex-Situ Soil Vapor Extraction and Stabilization of the On-Site Landfill, an RU, also known as SWMU 3;
Clean Closure of the Chrome Destruct Pit, SWMU 14; and,
Shutdown and Closure with waste in place of the Chrome Plating Lines, SWMU 27.

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Soil removal measures and closure of SWMUs and RUs have provided obvious benefit at the Site; however, entire facility groundwater corrective measures are appropriate near Riverdale Creek since it appears that the constituent plume has migrated in that direction. Thus, migration control measures such as the Permeable Reactive Barrier have been judged to be the most appropriate corrective measures for the remedy at the site.

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Language in this HSWA permit has been modified or abridged in places to accommodate the fact that most of the investigation and planning for the remedy has already been conducted.

PART I - STANDARD CONDITIONS

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I.A. EFFECT OF PERMIT

Pursuant to 40 CFR §264.10, the requirements of this RCRA permit extend to all contiguous property under the control of the Permittee (see Figure 1 in Appendix A for a map which demarks the property boundaries of land under the Permittee's control). Compliance with this RCRA permit constitutes compliance, for purposes of enforcement, with Subtitle C of RCRA except for those requirements not included in the permit which become effective by statute, are promulgated under 40 CFR Part 268 restricting placement of hazardous waste in or on the land or are promulgated under 40 CFR Part 264 of this chapter regarding leak detection systems for new and replacement surface impoundment, waste pile, and landfill units, and lateral expansions of surface impoundment, waste pile, and landfill units, as specified in 40 CFR §270.4. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of state or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under Sections 3008(a), 3008(h), 3004(v), 3008(c), 3007, 3013 or Section 7003 of RCRA, Sections 104, 106(a), 106(e), or 107 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq., commonly known as CERCLA), or any other law providing for protection of public health or the environment.

I.B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §§270.41, 270.42, and 270.43 except for the Corrective Action schedule of compliance which shall be modified in accordance with Condition II.I. of this permit. The filing of a request for a permit modification, revocation and re-issuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

I.C. SEVERABILITY

The provisions of this permit are severable, as specified in 40 CFR §124.16, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

I.D. DUTIES AND REQUIREMENTS

I.D.1. Duty to Comply

The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of RCRA and is grounds for enforcement action, permit termination, revocation and re-issuance, modification, or denial of a permit renewal application.

I.D.2. Duty to Reapply

If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least one hundred eighty (180) calendar days before this permit expires, unless permission for a later date has been granted by the Regional Administrator.

I.D.3. Obligation for Corrective Action

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The Permittee is required to continue this permit for any period necessary to comply with the corrective action requirements of this permit.

I.D.4. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

I.D.5. Duty to Mitigate

In the event of noncompliance with the permit, the Permittee shall take all reasonable steps to minimize releases of hazardous waste or hazardous constituents to the environment, and shall carry out such measures as are reasonable to prevent significant adverse effects on human health or the environment.

I.D.6. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

I.D.7. Duty to Provide Information

The Permittee shall furnish to the Regional Administrator, within a reasonable time, any relevant information which the Regional Administrator may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Regional Administrator, upon request, copies of records required to be kept by this permit.

I.D.8. Inspection and Entry

The Permittee shall allow the Regional Administrator, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

a. Enter at reasonable times upon the Permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated, or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by RCRA, any substances or parameters at any location.

I.D.9. Monitoring and Records

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I.D.9.a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative waste sample to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261, the EPA Region 4 Environmental Investigations Standard Operating Procedure and Quality Assurance Manual (EISOPQAM) (most recent version), or an equivalent method approved by the Regional Administrator. Procedures for sampling contaminated media must be those identified in the EPA Region 4 EISOPQAM or an equivalent method approved by the Regional Administrator. Laboratory methods must be those specified in the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, or an equivalent method approved by the Regional Administrator.

I.D.9.b. The Permittee shall retain at the facility, as provided for under 40 CFR Part 264, or other appropriate location as approved by the Regional Administrator, records of all monitoring information required under the terms of this permit, including all calibration and maintenance records, records of all data used to prepare documents required by this permit, copies of all reports and records required by this permit, the certification required by 40 CFR §264.73(b)(9), and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report, certification or application, or until corrective action is completed, whichever date is later. As a generator of hazardous waste, the Permittee shall retain a copy of all notices, certifications, demonstrations, waste analysis data, and other documentation produced pursuant to 40 CFR Part 268 for at least three years from the date that the waste which is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal, or until corrective action is completed, whichever date is later. These periods may be extended by request of the Regional Administrator at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility.

I.D.9.c. Records of monitoring information shall specify:

i. The dates, exact place, and times of sampling, or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The dates analyses were performed;

iv. The name of the laboratory which performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.D.10. Reporting Planned Changes

The Permittee shall give written notice to the Regional Administrator as soon as possible of any planned physical alterations or additions, including Permittee -initiated Interim Measures under Condition II.F.1.b., which impact known or suspected contamination at or from SWMUs or AOCs referenced in Conditions II.A.1., II.A.3., II.A.4., and II.C. The notice shall include at a minimum, a summary of the planned change, the reason for the planned change, a discussion of the impact(s) the planned change will have on the ability to investigate contamination at or from the SWMU or AOC, and a discussion of the impact(s) the planned change will have on the known or suspected contamination.

I.D.11. Anticipated Noncompliance

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The Permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with the requirements of this permit.

I.D.12. Transfer of Permit

This permit may be transferred to a new owner or operator only after notice to the Regional Administrator and only if it is modified or revoked and reissued pursuant to 40 CFR §270.40(b) or §270.41(b)(2) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act. Before transferring ownership or operation of the facility during its operating life, or of a disposal facility during the post-closure care period, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Parts 264 and 270, HSWA and this permit.

I.D.13. Compliance Schedules

Written notification of compliance or noncompliance with any item identified in the compliance schedule of this permit shall be submitted according to each schedule date. If the Permittee does not notify the Regional Administrator within fourteen (14) calendar days of its compliance or noncompliance with the schedule, the Permittee shall be subject to an enforcement action. Submission of a required item according to the schedule constitutes notification of compliance.

I.D.14. Twenty-four Hour Reporting

I.D.14.a. The Permittee shall report any noncompliance or any imminent or existing hazard from a release of hazardous waste or hazardous constituents which may endanger human health or the environment. Any such information shall be reported orally to the Regional Administrator within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include:

i. Information concerning the release of any hazardous waste or hazardous constituents which may endanger public drinking water supplies.

ii. Information concerning the release or discharge of any hazardous waste or hazardous constituents, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility.

I.D.14.b. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazard to the environment and human health outside the facility; and

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vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.D.14.c. A written report shall also be provided to the Regional Administrator within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Conditions I.D.14.a. and b.; a description of the noncompliance or imminent hazard and its cause; the periods of noncompliance (including exact dates and times); whether the noncompliance or imminent hazard has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance or imminent hazard.

I.D.15. Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported above, at the time written reports as required by this permit are submitted. The reports shall contain the information listed in Condition I.D.14. as appropriate.

I.D.16. Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in any document(s) submitted to the Regional Administrator, the Permittee shall promptly submit such facts or information.

I.E. SIGNATORY REQUIREMENT

All applications, reports, or information submitted to the Regional Administrator shall be signed and certified in accordance with 40 CFR §270.11.

I.F. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR §270.12.

I.G. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, 286 and 270, unless this permit specifically provides otherwise. Where terms are not defined in the regulation, the permit, or EPA guidelines or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

I.G.1 The term "area of concern" (AOC) for purposes of this permit includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Regional Administrator to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act and 40 CFR §270.32(b)(2) in order to ensure adequate protection of human health and the environment.

I.G.2. A "Corrective Action Management Unit" (CAMU) for purposes of this permit, means any area within a facility that is used only for managing remediation wastes for implementing corrective action or cleanup at the facility.

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I.G.3. "Corrective measures" for purposes of this permit, include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR §264.101. Corrective measures may address releases to air, soils, surface water or groundwater.

I.G.4. "Extent of contamination" for the purposes of this permit is defined as the horizontal and vertical area in which the concentrations of hazardous constituents in the environmental media being investigated are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Regional Administrator.

I.G.5. "Facility" for purposes of this permit includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under §264.101, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

I.G.6. A "hazardous constituent" for purposes of this permit are those substances listed in 40 CFR Part 261 Appendix VIII and Part 264 Appendix IX.

I.G.7. "Interim Measures" for purposes of this permit are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.

I.G.8. "Land Disposal" for purposes of this permit and 40 CFR Part 268 means placement in or on the land except for a CAMU and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.

I.G.9. "Landfill" for the purposes of this permit includes any disposal facility or part of a facility where hazardous waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.

I.G.10. A "release" for purposes of this permit includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.

I.G.11. "Remediation waste" for the purposes of this permit includes all solid and hazardous wastes, and all media (including groundwater, surface water, soils, and sediments) and debris, that contain listed hazardous wastes or that themselves exhibit a hazardous characteristic, and are managed for the purpose of implementing corrective action requirements under §264.101 and RCRA section 3008(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004(v) or 3008(h) for releases beyond the facility boundary implementing cleanup.

I.G.12. "Screening levels" for the purposes of this permit are health-based concentrations of hazardous constituents determined to be indicators for the protection of human health and/or the environment.

I.G.13. "Solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from

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community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).

I.G.14. A "solid waste management unit" (SWMU) for the purposes of this permit includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for the management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. SWMUs include areas that have been contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g. product or process spills).

I.G.15. A "Temporary Unit" (TU) for the purposes of this permit includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Regional Administrator, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.

I.G.16. A "unit" for the purposes of this permit includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.

PART II - CORRECTIVE ACTION

II.A. APPLICABILITY

The Conditions of this Part apply to:

II.A.1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A, Table 1, which require a RCRA Facility Investigation (RFI);

II.A.2. The SWMUs and AOCs identified in Appendix A Table 1, which require no further investigation under this permit at this time;

II.A.3. The SWMUs and AOCs identified in Appendix A Table 1, which require confirmatory sampling;

II.A.4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means; as used in this Part of the permit, the terms "discover", "discovery", or "discovered" refer to the date on which the Permittee either, (1) visually observes evidence of a new SWMU or AOC, (2) visually observes evidence of a previously unidentified release of hazardous constituents to the environment, or (3) receives information which suggests the presence of a new release of hazardous waste or hazardous constituents to the environment;

II.A.5. Contamination which has migrated beyond the facility boundary, if applicable. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, as determined by the Regional Administrator, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such

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releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action shall be required.

II.B. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

II.B.1. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any suspected new AOC as discovered under Condition II.A.4. The notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). The Regional Administrator may conduct, or require the Permittee to conduct, further assessment (i.e., Confirmatory Sampling) in order to determine the status of the suspected AOC. The Regional Administrator will notify the Permittee in writing of the final determination as to the status of the suspected AOC. If the Regional Administrator determines that further investigation of an AOC is required, the permit will be modified in accordance with 40 CFR §270.41.

II.B.2. The Permittee shall notify the Regional Administrator in writing, within fifteen (15) calendar days of discovery, of any additional SWMU as discovered under Condition II.A.4.

II.B.3. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified under Condition II.B.2. At a minimum, the SAR shall provide the following information:

a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR §270.14(b)(19).

b. Designation of type and function of unit(s).

c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).

d. Dates that the unit(s) was operated.

e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the wastes.

f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

II.B.4. Based on the results of the SAR, the Regional Administrator shall determine the need for further investigations at the SWMUs covered in the SAR. If the Regional Administrator determines that such investigations are needed, the Permittee shall, **at the discretion of the Regional Administrator**, be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. or II.D.2.

II.C. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES FROM SWMUs or AOCs

II.C.1. The Permittee shall notify the Regional Administrator in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition II.A.2. or SWMU or AOCs identified in Condition II.A.4. for which further investigation under Condition II.B.4. was not required.

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II.C.2. If the Regional Administrator determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b.: or, the Regional Administrator may choose to streamline the investigative and remedial process by allowing the facility to skip or combine steps in the traditional Subpart S corrective action process.

II.D. CONFIRMATORY SAMPLING (CS)

II.D.1. **Because confirmatory sampling has already been implemented at many of units identified in Condition II.A.3, the CS requirements listed in Condition II.D shall be interpreted as follows:** If a CS Work Plan has not been submitted for a unit, then Condition II.D.2 or Condition II.D.3 initiates the CS Requirement. If a CS Work Plan has already been submitted for a unit, then Condition II.D.4 through Condition II.D.6 govern implementation of the CS requirements for this unit. If a CS Work Plan has already been submitted and approved for a unit, then Condition II.D.5 through Condition II.D.6 govern implementation of the CS requirements for this unit. The CS Work Plan may include tank or sump integrity tests certified by a professional engineer in lieu of actual sampling such as at SWMU # 12 as identified in Appendix A, Table 1. If the CS Report has already been submitted to the Regional Administrator for review, then Condition II.D.6 is applicable for this unit.

II.D.2. Upon notification by the Regional Administrator, the Permittee shall prepare and submit a Confirmatory Sampling (CS) Work Plan for suspected AOCs per Condition II.B.1. or newly identified SWMUs per Condition II.B.4. The work plan shall be submitted within forty-five (45) calendar days of notification by the Regional Administrator that a CS Work Plan is required. The CS Work Plan shall meet the basic requirements listed in Condition II.D.1.

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II.D.3. The CS Work Plan must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the CS Work Plan schedule in the letter approving the CS Work Plan. If the Regional Administrator disapproves the CS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CS Work Plan's deficiencies and specify a due date for submission of a revised CS Work Plan, (2) revise the CS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CS Work Plan and notify the Permittee of the conditions.

II.D.4. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Work Plan.

II.D.5. The Permittee shall prepare and submit to the Regional Administrator in accordance with the schedule in the approved CS Work Plan, a Confirmatory Sampling (CS) Report identifying all SWMUs or AOCs that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data, and a summary and analysis of the data, that supports the above determination. If submission of the CS Report coincides with submission of the RFI Report, then the CS Report and the RFI Report may be combined into one submission.

II.D.6. Based on the results of the CS Report, the Regional Administrator shall determine the need for further investigations at the SWMUs or AOCs covered in the CS Report. If the Regional Administrator determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition II.E.1.b. The Regional Administrator will notify the Permittee of any no further action decision.

II.E. RCRA FACILITY INVESTIGATION (RFI)

II.E.1.a. **Because a RCRA Facility Investigation (RFI) has already been implemented for many of the units identified in Condition II.A.1, the RFI requirements listed in Condition II.E shall be interpreted as follows:** If an RFI Work Plan has not been submitted for a unit, then either Condition II.E.1.b or Condition II.E.1.c initiates the RFI Requirement. If an RFI Work Plan has already been submitted, then Condition II.E.1.e through Condition II.E.3.d control the RFI requirements for this unit. If an RFI Work Plan has already been submitted

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and approved for a unit, then Condition II.E.2 and beyond govern implementation of the RFI requirements for this unit. If the RFI Report for a unit has already been submitted to the Regional Administrator for review, then Conditions II.E.3.d and beyond are applicable for this unit.

II.E.1.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of notification by the Regional Administrator, an RFI Work Plan for those units identified under Condition II.B.4., Condition II.C.2., or Condition II.D.6. The RFI Work Plan(s) shall be developed to meet the requirements of Condition II.E.1.c.

II.E.1.c. The RFI Work Plan(s) shall meet the requirements specified by the Regional Administrator. The RFI Work Plan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of contamination and the potential pathways of contaminant releases to the air, soil, surface water, and groundwater. The Permittee must provide sufficient justification and associated documentation that a release is not probable or has already been characterized if a unit or a media/pathway associated with a unit (groundwater, surface water, soil, subsurface gas, or air) is not included in the RFI Work Plan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Regional Administrator. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements for the RFI Work Plan. Such omissions or deviations are subject to the approval of the Regional Administrator. In addition, the scope of the RFI Work Plan(s) shall include all investigations necessary to ensure compliance with 40 CFR §264.101(c).

II.E.1.d. The RFI Work Plan(s) must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the RFI Work Plan schedule in the letter approving the RFI Work Plan(s). If the Regional Administrator disapproves the RFI Work Plan(s), the Regional Administrator shall either (1) notify the Permittee in writing of the RFI Work Plan's deficiencies and specify a due date for submission of a revised RFI Work Plan, (2) revise the RFI Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Work Plan, or (3) conditionally approve the RFI Work Plan and notify the Permittee of the conditions.

II.E.2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Work Plan. The Permittee shall notify the Regional Administrator at least twenty (20) days prior to any sampling activity.

II.E.3. RFI Reports

II.E.3.a. The Permittee shall prepare and submit to the Regional Administrator Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the RFI Work Plan(s) submitted under Condition II.E.1. The Draft RFI Report(s) shall be submitted to the Regional Administrator for review in accordance with the schedule in the approved RFI Work Plan(s). The Final RFI Report(s) shall be submitted to the Regional Administrator within thirty (30) calendar days of receipt of the Regional Administrator's final comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, identify all hazardous constituents present in all media, and describe actual or potential receptors. The RFI Report(s) shall also describe the extent of contamination (qualitative/quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a work plan for the final phase investigatory actions required based on the initial findings. Approval of the final phase work plan shall be carried out in accordance with Condition II.E.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to

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support a Corrective Measures Study, if necessary.

II.E.3.b. The Permittee shall prepare and submit to the Regional Administrator, along with the Draft and Final RFI Report(s), screening levels for each of the hazardous constituents reported in Condition II.E.3.a. Screening levels shall be calculated as specified in Appendix B of this permit.

II.E.3.c. The Regional Administrator will review the RFI Report(s), including the screening levels described in Condition II.E.3.b. The Regional Administrator shall notify the Permittee of the need for further investigative action if necessary and, if appropriate at this moment of the investigation, inform the Permittee, if not already notified, of the need for a Corrective Measures Study to meet the requirements of II.G and 40 CFR §264.101. The Regional Administrator will notify the permittee of any no further action decision. Any further investigative action required by the Regional Administrator shall be prepared and submitted in accordance with a schedule specified by the Regional Administrator and approved in accordance with Condition II.E.1.d.

II.E.3.d. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Regional Administrator with quarterly RFI Progress Reports (90 day intervals) beginning ninety (90) calendar days from the start date specified by the Regional Administrator in the RFI Work Plan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the approved RFI Work Plan during the reporting period;

iv. Summaries of any significant contacts with local community public interest groups or State government;

v. Summaries of any problems or potential problems encountered during the reporting period;

vi. Actions taken to rectify problems;

vii. Changes in relevant personnel;

viii. Projected work for the next reporting period; and

ix. Copies of daily reports, inspection reports, data, etc.

II.F. INTERIM MEASURES (IM)

II.F.1.a. Because Interim Measures have already been implemented for many of the units identified in Condition II.A.1, the IM requirements listed in Condition II.F shall be interpreted as follows: If a required IM Work Plan has not been submitted for a unit, then Condition II.F.1.b and beyond are applicable. If IM has not been imposed for a unit, then Condition II.F.1.c and beyond are applicable. If an IM Work Plan has already been submitted but is unapproved, then Condition II.F.1.d and beyond control the IM for this unit. If an IM Work Plan has already been submitted and approved for a unit, then Condition II.F.2 and beyond govern implementation of the IM requirements for this unit.

II.F.1.b. The Permittee may initiate IM at a SWMU or AOC by submitting the appropriate notification pursuant to Condition I.D.10. The Regional Administrator will process Permittee -initiated IM by either conditionally approving the IM or imposing an IM Work Plan per Condition II.F.1.a. Permittee-initiated IM shall be considered conditionally approved unless the Regional Administrator specifically imposes an IM Work Plan

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within thirty (30) calendar days of receipt of notification of the Permittee -initiated IM. The scope and success of Permittee -initiated IM conditionally approved per Condition II.F.1.b. shall be subject to subsequent in-depth review; the Regional Administrator will either comment on or approve the Permittee -initiated IM. Permittee - initiated IM must follow the progress and final reporting requirements in Condition II.F.3.

II.F.1.c. The IM Work Plan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and is consistent with and integrated into any long-term solution at the facility. The IM Work Plan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.

II.F.1.d. The IM Work Plan imposed under Condition II.F.1.a. must be approved by the Regional Administrator, in writing, prior to implementation. The Regional Administrator shall specify the start date of the IM Work Plan schedule in the letter approving the IM Work Plan. If the Regional Administrator disapproves the IM Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the IM Work Plan's deficiencies and specify a due date for submission of a revised IM Work Plan, (2) revise the IM Work Plan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Work Plan, or (3) conditionally approve the IM Work Plan and notify the Permittee of the conditions.

II.F.2. IM Implementation

II.F.2.a. The Permittee shall implement the interim measures imposed under Condition II.F.1.a. in accordance with the approved IM Work Plan.

II.F.2.b. The Permittee shall give notice to the Regional Administrator as soon as possible of any planned changes, reductions or additions to the IM Work Plan imposed under Condition II.F.1.a. or initiated by the Permittee under Condition II.F.1.b.

II.F.2.c. Final approval of corrective action required under 40 CFR §264.101 which is achieved through interim measures shall be in accordance with 40 CFR §270.41 and Condition II.H. as a permit modification.

II.F.3. IM Reports

II.F.3.a. If the time required for completion of interim measures imposed under Condition II.F.1.a. or implemented under Condition II.F.1.b. is greater than one year, the Permittee shall provide the Regional Administrator with progress reports at intervals specified in the approved Work Plan or semi-annually for Permittee initiated interim measures. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the interim measures completed;

ii. Summaries of findings;

iii. Summaries of any deviations from the IM Work Plan during the reporting period;

iv. Summaries of any problems or potential problems encountered during the reporting period; and

v. Projected work for the next reporting period.

II.F.3.b. The Permittee shall prepare and submit to the Regional Administrator, within ninety (90) calendar days of completion of interim measures conducted under Condition II.F., an Interim Measures (IM) Report. The IM Report shall contain the following information at a minimum:

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i. A description of interim measures implemented;

ii. Summaries of results;

iii. Summaries of all problems encountered;

iv. Summaries of accomplishments and/or effectiveness of interim measures; and

v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.D.9.

II.G. CORRECTIVE MEASURES STUDY

II.G.1. Corrective Measures Study (CMS) Work Plan

II.G.1.a. The Permittee shall prepare and submit a CMS Work Plan for those units requiring a CMS within ninety (90) calendar days of notification by the Regional Administrator that a CMS is required. This CMS Work Plan shall be developed to meet the requirements of Condition II.G.1.b. The Permittee may seek approval from the Regional Administrator for concurrent RFI/CMS. The CMS may be performed concurrent with the RFI process if the Regional Administrator determines that sufficient investigative details are available to allow concurrent action.

II.G.1.b. The CMS Work Plan shall meet the requirements specified by the Regional Administrator. The CMS Work Plan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit deleted from the CMS Work Plan. Such deletion of a unit is subject to the approval of the Regional Administrator. The CMS shall be conducted in accordance with the approved CMS Work Plan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements for the CMS Work Plan. Such omissions or deviations are subject to the approval of the Regional Administrator. The scope of the CMS Work Plan shall include all investigations necessary to ensure compliance with RCRA § 3005(c)(3), 40 CFR §264.101, §264.552, and §270.32(b)(2). The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition II.A.5.

II.G.1.c. The Regional Administrator shall either approve or disapprove, in writing, the CMS Work Plan. If the Regional Administrator disapproves the CMS Work Plan, the Regional Administrator shall either (1) notify the Permittee in writing of the CMS Work Plan's deficiencies and specify a due date for submission of a revised CMS Work Plan, (2) revise the CMS Work Plan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Work Plan and notify the Permittee of the conditions. This modified CMS Work Plan becomes the approved CMS Work Plan.

II.G.2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Work Plan, no later than fifteen (15) calendar days after the Permittee has received written approval from the Regional Administrator for the CMS Work Plan. Pursuant to Permit Condition II.G.1.b. the CMS shall be conducted in accordance with the approved CMS Work Plan.

II.G.3. CMS Report

II.G.3.a. The Permittee shall prepare and submit to the Regional Administrator a draft and final CMS Report for the study conducted pursuant to the approved CMS Work Plan and in accordance with the guidelines specified by the Regional Administrator. The draft CMS Report shall be submitted to the Regional Administrator in accordance

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II.J.1. All work plans and schedules shall be subject to approval by the Regional Administrator prior to implementation to assure that such work plans and schedules are consistent with the requirements of this Permit and with applicable regulations. The Permittee shall revise all submissions and schedules **as specified by the Regional Administrator.** Upon approval the Permittee shall implement all work plans and schedules as written.

II.J.2. All work plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submissions may be granted by the Regional Administrator based on the Permittee's demonstration that sufficient justification for the extension exists.

II.J.3. If the Permittee at any time determines that the SAR information required under Condition II.B., the CS Work Plan under Condition II.D., or RFI Work Plan(s) required under Condition II.E. no longer satisfy the requirements of 40 CFR §264.101 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended Work Plan(s) to the Regional Administrator within ninety (90) calendar days of such determination.

II.J.4. Two (2) copies of all reports and work plans and an electronic version of the same reports/work plans shall be provided by the Permittee to the Regional Administrator in care of the RCRA Branch Chief at the following address:

Chief, RCRA Programs Branch
Waste Management Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S. W.
Atlanta, Georgia 30303-3104

II.K. APPROVAL/DISAPPROVAL OF SUBMISSIONS

II.K.1. The Regional Administrator will review the work plans, reports, schedules, and other documents ("submissions") which require the Regional Administrator's approval in accordance with the conditions of this permit. The Regional Administrator will notify the Permittee in writing of any submission that is disapproved, and the basis therefore. Condition II.L. shall apply only to submissions that have been disapproved and revised by the Regional Administrator, or that have been disapproved by the Regional Administrator, then revised and re-submitted by the Permittee, and again disapproved by the Regional Administrator.

II.L. DISPUTE RESOLUTION

Notwithstanding any other provision in this permit, in the event the Permittee disagrees, in whole or in part, with the Regional Administrator's revision of a submission or disapproval of any revised submission required by the permit, the following may, at the Permittee's discretion, apply:

II.L.1.a. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Regional Administrator in writing within thirty (30) days of receipt of the Regional Administrator's revision of a submission or disapproval of a revised submission. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the permit, the basis for the Permittee's position, and any matters considered necessary for the Regional Administrator's determination.

II.L.1.b. The Regional Administrator and the Permittee shall have an additional thirty (30) days from EPA's receipt of the notification provided for in Condition II.L.1.a. to meet or confer to resolve any disagreement.

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II.L.1.c. In the event agreement is reached, the Permittee shall comply with the terms of such agreement or if appropriate submit the revised submission and implement the same in accordance with and within the time frame specified in such agreement.

II.L.1.d. If agreement is not reached within the thirty (30) day period, the Regional Administrator will notify the Permittee in writing of his/her decision on the dispute, and the Permittee shall comply with the terms and conditions of the Regional Administrator's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Waste Management Division Director.

II.L.1.e. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Regional Administrator determines are not affected by the dispute.

PART III - LAND DISPOSAL RESTRICTIONS

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III.A. GENERAL RESTRICTIONS

III.A.1. 40 CFR Part 268 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR Part 268. Where the Permittee has applied for an extension, waiver or variance under 40 CFR Part 268, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.

III.B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

III.B.1. A restricted waste identified in 40 CFR Part 268 Subpart C may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268 Subparts C and/or D are met.

III.B.2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 is prohibited unless the requirements of 40 CFR Part 268 Subpart E are met.

PART IV - RCRA ORGANIC AIR EMISSION REQUIREMENTS

IV.A. APPLICABILITY

40 CFR Subpart CC applies to all tanks, containers, miscellaneous units and surface impoundments identified in the State's RCRA permit, except as provided for in 40 CFR § 264.1 and § 264.1080(b). At the time of issuance of this permit, The Mississippi Department of Environmental Quality was authorized for all requirements for 40 CFR Subpart CC, therefore[??? Missing info]

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IV.B. EMISSION CONTROL TECHNOLOGY

The Permittee shall install and maintain all regulated units and associated emission control technology in accordance with the detailed plans, schedules, information and reports as contained in the facility's RCRA Part B Permit Application for the Mississippi Department of Environmental Quality.

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IV.C. GENERAL STANDARDS

The Permittee shall comply with the applicable requirements of 40 CFR Part 264, Subpart CC, as adopted by the Mississippi Department of Environmental Quality.

IV.D. NOTIFICATION OF NEW UNITS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, or modifying an existing process, waste handling or tank or container such that the unit(s) will become subject to 40 CFR Part 264 Subpart CC, the Permittee shall apply for a permit modification under § 270.42, and provide specific Part B application information required under 40 CFR §§ 270.14-17 and § 270.27, as applicable, with the modification request.

V. PART V - NEWLY LISTED WASTES

V.A. Authorized Waste

List waste codes here if there are listed wastes for which the State is not authorized.

V.B. General Requirements

The Permittee must store, treat, and dispose of the wastes listed in Condition V.A. in accordance with the conditions of the Post Closure Permit issued by the State of Mississippi on August 1, 1998, or the Post Closure Permit issued by the State of Mississippi, currently in effect.

VI. PART VI - GENERAL and SPECIFIC CONDITIONS

VI.A. Remedy

The remedy identified in the CMS is based on the continued use of the land for commercial and industrial purposes, where appropriate. Where offsite releases have occurred, the remedy will be based on residential land use.

VI.B. Institutional Controls

The facility must consider institutional or other appropriate non-engineering controls for protection of human health and the environment from contamination left in place at SWMU 27, the Chrome Plating Line, and any other SWMUs closed with waste in place. Institutional controls may also be used to protect the remedy if the HSWA permit is terminated at the completion of corrective action, with controls.

VI.C. Solid Waste Management Units

VI.C.1. Waste left in place at SWMU 27, the Chrome Plating Lines is under the Main Plant Building. Hexavalent chromium contamination above industrial preliminary remediation goals has been left in place because it is commingled with the TCE and toluene plumes. There is a potential threat to indoor air if remediation is attempted as long as the Main Plant Building remains occupied. This waste left in place must be monitored downgradient of the Main Plant Building on a regular basis as long as the waste is left in place.

VI.C.2 When the Main Plant Building is removed, the chromium laden waste left in place must be remediated to industrial or residential levels, as appropriate.

VI.C.3. Indoor air monitoring is required every two years. The last indoor air monitoring event was conducted on

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February 17, 2003. The next indoor air monitoring event should be a summertime monitoring event to be conducted in 2005. Following that, another winter sampling event should take place in winter 2007-2008, and so forth, alternating between winter and summer events every two years as long as the main plant building is occupied. [This has not been discussed]

VI.C.4. SWMU 12, the Wet Well, [a large in-ground sump, part of the Waste Water Treatment System], requires no further remedial action until it is taken out of service unless or until it is found to be leaking. This unit was inspected and cleaned on July 2, 2002. This permit requires that inspection and maintenance be conducted by a qualified firm independent of the permittee every 5 years, and the results of the third party inspection be furnished to EPA.

VI.C.5. The permeable reactive barrier, or the chosen final remedy is required to be in place until the levels of contaminants in groundwater have been remediated to appropriate goals agreed upon by the permittee and the EPA.

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APPENDICES

APPENDIX A

FIGURE 1: FACILITY BOUNDARY MAP

FIGURE 2: SITE MAP SHOWING LOCATIONS OF PRIORITY SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN

AND

TABLE 1: LIST OF SOLID WASTE MANAGEMENT UNITS/AREAS OF CONCERN

{INSERT FIGURE 1 SHOWING FACILITY BOUNDARIES}

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APPENDIX B

SCREENING LEVELS

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I. DEFINITION

Screening levels are conservative health-based concentrations of hazardous constituents determined to be indicators for the protection of human health or the environment. Screening levels shall be set for all hazardous constituents, a subset of hazardous wastes, identified in the RFI Report(s) or for those hazardous constituents which the Regional Administrator has reason to believe may have been released from a solid waste management unit (SWMU) or Area of Concern (AOC) at the facility. Should the concentration of a hazardous constituent(s) in an aquifer, surface water, soils, or air exceed its screening level for any environmental medium, the Regional Administrator may require the Permittee to conduct a Corrective Measure Study (CMS) to meet the requirements of permit Condition II.G., and 40 CFR §264.101. If the Regional Administrator determines that a constituent(s) released from a SWMU or AOC in quantities below its respective screening level(s) may pose a threat to human health or the environment, given site-specific exposure conditions, cumulative effects, ecological concerns, etc., then the Regional Administrator has the authority to require a CMS to meet the requirements of permit Condition II.G., and 40 CFR §264.101.

Screening levels shall be concentration levels which satisfy the following criteria:

A. 1. Is derived in a manner consistent with EPA guidelines for assessing human and environmental health risks from hazardous constituents; and

2. Is based on scientifically valid studies conducted in accordance with the Toxic Substances Control Act (TSCA) Good Laboratory Practice Standards, or equivalent; and

3. For human health screening levels to address carcinogens, represents a concentration associated with an excess upper bound lifetime cancer risk of 1×10^{-6} for carcinogens due to continuous constant lifetime exposure; and

4. For human health screening levels to address systemic toxicants, represents a concentration to which the human population (including sensitive subgroups) could be exposed on a daily basis that is likely to be without appreciable risk of deleterious effects during a lifetime.

B. For constituent(s) detected in groundwater, air, surface water, or soils, for which a concentration level that meets the criteria specified in section I.A.1 through I.A.4 of this appendix is not available or possible, the screening level for the constituent(s) shall be the background concentration of the constituent(s).

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II. GROUNDWATER

A. Screening levels for constituents in groundwater shall be concentrations specified as:

1. MCLs; or

2. For constituents for which MCLs have not been promulgated, a concentration which satisfies the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

B. In deriving human health screening levels for constituents for which MCLs have not been promulgated, the recommended equations/assumptions shall be that followed by Region 9 in its tables of Preliminary Remediation Goals. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves the right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

III. SURFACE WATER

A. Screening levels for constituents in surface water shall be concentrations specified as:

1. Water Quality Standards established pursuant to the Clean Water Act by the State in which the facility is located, where such standards are expressed as numeric values; or

2. Numeric interpretations of State narrative water quality standards where water quality standards expressed as numeric values have not been established by the State; or

3. MCLs for constituents in surface water designated by the State for drinking water supply, where numeric values or numeric interpretations, described in paragraphs 1 and 2, are not available; or

4. For constituents in surface waters designated by the State for drinking water supply for which numeric values, numeric interpretations, or MCLs are not available, a concentration which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated assuming exposure through consumption of the water contaminated with the constituent; or

5. For constituents in surface waters designated for use or uses other than drinking water supply and for which numeric values or numeric interpretations have not been established, a concentration established by the EPA Regional Administrator which meets the criteria specified in section I.A.1 through I.A.4 of this appendix shall be calculated.

B. In deriving human health screening levels for constituents in surface water, the recommended equations/assumptions shall be that followed by Region 9 in its tables of Preliminary Remediation Goals. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default

exposure assumptions, etc.) may change, the Regional Administrator reserves the right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

IV. AIR

A. Screening levels for constituents in air shall be defined as concentrations which meet the criteria specified in section I.A.1 through I.A.4. The screening levels for air shall be measured or estimated at the facility boundary, or another location closer to the unit if necessary to protect human health and the environment.

B. In deriving human health screening levels for constituents in air, the RfC should be utilized as the screening level, where available. The RfC includes exposure assumptions, and no calculations are necessary to calculate a screening level. If a RfC is not available, the recommended methodology/assumptions shall be that followed in the Region 9 tables of Preliminary Remediation Goals. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves the right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.

V. SOILS

A. Screening levels for constituents in soils shall be concentrations which meet the criteria specified in section I.A.1 through I.A.4 of this appendix.

B. The calculation of human health screening levels for soil includes several specific exposure routes which must be evaluated individually: 1) ingestion, 2) inhalation and 3) leachability to groundwater. In deriving screening levels to address ingestion, inhalation and leaching, the methodology/assumptions found in the most recent Soil Screening Level Guidance should be reviewed for appropriate equations and assumptions. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves the right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

VI. SEDIMENT

Screening levels for constituents in sediment shall be based on whether human health or ecological health is the major concern. If ecological concerns are deemed to predominate, then screening levels for constituents in sediment shall be concentrations based on the latest sediment screening values as calculated by Region 4. If an ecological sediment screening value for a constituent of concern has not been generated by Region 4 and cannot be generated using the criteria in sections I.A.1 and I.A.2, then the ecological screening level for sediment shall be background. If human health is the prevailing concern, then the human health screening level for sediment shall address all applicable exposures. Because the science of risk assessment is in flux and technical criteria/opinion of today (e.g., content of standardized equations, use of default exposure assumptions, etc.) may change, the Regional Administrator reserves the right to revise the above recommended equations/assumptions as needed to meet the criteria listed in section I.A.1 through I.A.4.

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Statement of Basis for the Corrective Measures Grenada Manufacturing LCC Grenada Mississippi

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Introduction

This Statement of Basis [SB] is being published for the Grenada Manufacturing, LLC facility [Site] located at 635 Highway 332 in Grenada, Mississippi. The RCRA ID number of this site is MSD 007 037 278. The plant property includes 48.6 acres bordered by the Illinois Central Gulf Railroad to the north and east, a swampy area to the south, an abandoned roadbed to the west, and Riverdale Creek to the northwest. (This has changed with purchase of adjacent property). Surrounding land use is mixed residential, industrial and agricultural. The facility is located in an industrial park near Memphis Junction in Grenada [see Figure 1].

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Questions and Answers for the Public

What Is the Purpose of a Statement of Basis?

This Statement of Basis has been developed by the Resource Conservation and Recovery Act [RCRA] program, in order to inform the public and give the public an opportunity to comment on the proposed corrective measures to clean up contamination at the Grenada Manufacturing facility.

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Why Is Cleanup Needed?

The results of the RCRA Facility Investigation indicated that site contaminants had impacted several environmental media at the site; soil, groundwater, and air. These contaminants included the following: Trichloroethene; Cis-1,2-Dichloroethene; Vinyl Chloride; Tetrachloroethene; 1,1,2-Trichloroethane; 1,2-Dichloroethane; Benzene; Bis[2-ethyl-hexyl] Phthalate; Toluene; Chromium; Lead; and Arsenic. However, a Baseline Risk Assessment completed for the Site established that the Site poses only low-level threats for all media (i.e., the Site does not pose unacceptable human health risks to potential current or future receptors), except use of groundwater in the upper most groundwater for drinking water purposes (an unlikely scenario).

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How Do You Participate?

The EPA and Grenada Manufacturing are soliciting public review and comment on this SB prior to implementation of the final corrective measures. The final

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corrective measures will be incorporated into the Hazardous and Solid Waste Amendment [HSWA] permit for Grenada Manufacturing.

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The public comment period for this SB and the proposed corrective measures will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 45 days thereafter.

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If requested during the Public Comment period, Grenada Manufacturing and EPA will hold a public meeting to respond to any oral comments. To request a hearing or to provide written comments, please contact:

Mr. Donald Webster
USEPA Region 4
61 Forsyth Street S.W.
Atlanta, GA 30303
(404) 562-8469
Webster.Donald@epa.gov <mailto:Webster.Donald@epa.gov>

The HSWA Permit, the RCRA Facility Assessment Report, the RCRA Facility Investigation Report, the Interim Measures Report, the Corrective Measures Study Report and the Indoor Air Monitoring Report can be obtained from Mr. Webster. All except the RCRA Facility Assessment Report are available electronically.

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This Statement of Basis for the Corrective Measures is available for viewing or copying at the following libraries:

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Elizabeth Jones Library
1050 Fairfield Avenue
Grenada, MS 38901
(662) 226-2072

USEPA Region 4 Library
Sam Nunn Federal Building 9th Floor
61 Forsyth Street S.W.
Atlanta, GA 30303

It is also available for viewing in Adobe Acrobat format on EPA Region 4's website at:
http://www.epa.gov/region4/index.html

Electronic copies of the same documents in Adobe Acrobat format can also be obtained from the facility representative:

Mr. Donald Williams
Grenada Manufacturing, LLC

635 Highway 332
Grenada, Mississippi 38901
(662) 226-1161 ext. 113
dwilliams@GrenadaMfg.com

Proposed Corrective Measures for Grenada Manufacturing LCC

Description of Migration Control Measures

The corrective measures proposed for groundwater at the entire Site includes source removal at contaminated areas, and the installation of a permeable reactive barrier [PRB] upgradient of Riverdale Creek. The permeable reactive barrier consists of a trench backfilled with a sand and granular iron mixture, and would address site-wide groundwater migration. It is a passive technology that would require minimal operation and maintenance. The objective of the PRB is to chemically reduce chlorinated organics and hexavalent chromium as groundwater passes through the barrier. The PRB would be installed across the saturated groundwater thickness to a depth of approximately 60 feet below ground surface and keyed into the underlying clay layer. The PRB will provide substantial mass or volume reduction of constituents of concern. Constituents in the dissolved phase would be treated and destroyed to below groundwater cleanup goals as groundwater passes through the PRB. The PRB will provide a line of defense between the plume and the receptor [Riverdale Creek] by controlling constituents' migration.

This corrective measures will offer protection of human health and the environment since potential exposure pathways and levels of risk would be greatly reduced by migration control measures and destruction of dissolved phase chlorinated organics and hexavalent chromium. The PRB design documentation shows that destruction of the chlorinated organics and hexavalent chromium in dissolved phase would be achieved, thus affecting cleanup standards, such as the Maximum Concentration Limits [MCLs] for drinking water, downgradient of the barrier.

The PRB construction activities will include excavation and dewatering of potentially contaminated soil. Excavated soil will be placed above grade on the upgradient side of the PRB to drain, then spread within a bermed area and covered with clean soil to minimize potential contact with environmental media. Decontamination of heavy equipment will be conducted within bermed areas, and wash water will be collected, treated as appropriate, and discharged according to Clean Water Act regulations.

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Implementation of these corrective measures will immediately reduce the constituents' mobility and migration to receptors like Riverdale Creek. However, residual contamination between the PRB and Riverdale Creek will remain initially. With time, clean groundwater passing through the PRB, along with natural attenuation, will work to also cleanup the area between the PRB and the creek. PRB installation would not introduce unacceptable short-term risks since construction workers would be trained in health and safety, and personal protective equipment would be provided. Following Army Corps of Engineers guidelines and obtaining a construction permit for wetlands will minimize impacts to wetlands. A wetlands delineation study, an archaeological study, and a wildlife survey have already taken place (see below). The facility has agreed on mitigative measures with the Corps of Engineers for loss of wetlands due to excavation of the trench and building of the access road used to install the PRB and to sample the monitoring wells. These corrective measures will also provide long-term operation and permanence until the iron is no longer effective. The PRB may require rehabilitation or replacement of the iron filings at that time as part of operation and maintenance. In summary, the Permeable Reactive Barrier would control plume migration over the long term by destroying dissolved phase chlorinated organics and hexavalent chromium in situ.

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The completed *Design Basis Report* for the PRB was transmitted to the USEPA and MDEQ in April 2003. The preliminary construction schedule included in the *Design Basis Report* currently indicates that construction is anticipated to commence in the summer of 2004. ArvinMeritor, (one of the responsible parties) on behalf of Grenada Manufacturing, obtained a permit from the US Army Corps of Engineers (USACOE) for construction of the PRB. Brown and Caldwell (BC) completed a wetlands survey for the project site and the findings were transmitted to the USACOE in August 2002. A Pre-Construction Notification for Nationwide Permit #38 was transmitted to the USACOE in September 2002. As a result of this application, the Mississippi Department of Archives and History requested the conduct of a cultural resources survey of the project site. The survey has been completed and the report was transmitted to the agencies in July 2003. In general, no cultural resources were identified within the project area. The permit was issued by the USACOE in August 2003.

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The USACOE also requested wetlands mitigation for the Site to address filling of a portion of the wetlands during construction of the PRB. ArvinMeritor prepared a Wetlands Mitigation Plan, which was transmitted to the agencies in March 2003.

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At the request of the USEPA, ArvinMeritor also performed a field survey to verify two previous desktop reviews for threatened and endangered species. This field work has been completed and a letter was transmitted to the agencies in June 2003 reporting that no threatened or endangered species were identified in the area where the PRB is to be constructed.

The USEPA has requested specific performance monitoring requirements

associated with the PRB. These requirements are addressed in the *Design Basis Report* for the PRB; specifically, in Appendix E Performance Monitoring Plan. Comments received from the USEPA on the *Design Basis Report* included revisions to the Performance Monitoring Plan. At the request of the USEPA, ArvinMeritor initiated the sampling efforts outlined in the Performance Monitoring Plan (with consideration given to the USEPA comments on the Plan). The initial efforts included installation of ten new groundwater monitoring wells, collection of site-wide groundwater samples, and collection of surface water and sediment samples from Riverdale Creek. A report summarizing this work is currently being prepared by Brown & Caldwell. In addition, as required by the USEPA, quarterly surface water sampling in Riverdale Creek will begin in February 2004.

Description of Source Control Measures

A number of significant source control measures have been previously implemented at the Site. These source control measures include the following:

Free-product recovery at AOCs A and B
Free-product recovery at MW-2 located adjacent to the Sludge Lagoon [SWMU 4]
Closure of the former Equalization Lagoon [SWMU 2]
Removal action at the On-Site Landfill [SWMU 3]
Ex-Situ Soil Vapor Extraction and Stabilization of the On-Site Landfill [SWMU 3]
Clean Closure of the Chrome Destruct Pit [SWMU 14]
Shutdown and Closure of the Chrome Plating Lines [SWMU 27]

Source control measures have provided obvious benefit at the Site; however, additional source control measures are appropriate at the Site. Identification and evaluation of these additional source control measures is further discussed later in this SB.

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Facility Background

Description of Site and Regulatory History

Rockwell Automotive North America [now ArvinMeritor] Inc. operated a wheel cover manufacturing facility in Grenada, Mississippi from 1966 to 1985 before selling the operations and property to Textron Automotive Company, formerly Randall Textron, who then sold the operations and property to Grenada Manufacturing, LLC in 1999. Grenada Manufacturing, LLC [the Permittee] continues to operate the wheel cover plant but has made several modifications to the product line produced, including the elimination of the chrome plating line for wheel covers.

In accordance with the facility's Hazardous and Solid Waste Amendment [HSWA] Permit issued July 31, 1998, by EPA, the facility is undergoing HSWA Corrective Action for prior releases of hazardous waste, including hazardous constituents from various Solid Waste Management Units [SWMUs]. The RCRA Facility Assessment in 1997 identified 26 SWMUs and 3 Areas of Concern [AOCs]. Subsequently, one more SWMU, the Chrome Plating Line, was identified in 2002. See Figure 2 for names and locations of the priority SWMUs and AOCs at Grenada Manufacturing. These SWMUs and AOCs correspond to those listed in Appendix A for the corrective measures.

To that end, Interim Measures [IMs] for the Site were required by EPA Region 4 in year 2000. EPA requested that the facility immediately address site-wide groundwater contamination, as well as source removal and soil contamination for the highest priority SWMUs and AOCs. In year 2003, EPA called for a final Corrective Measures Study [CMS] that would encompass the corrective measures for the entire Site. The facility responded with a Corrective Measures Study report wherein the alternatives and the corrective measures for the entire Site were presented. This document is entitled: Corrective Measures Study Report Grenada Manufacturing, L.L.C. Grenada, Mississippi. It is available for public review as are the RCRA Facility Assessment, the RCRA Facility Investigation Report and the Interim Measures Study Report.

The facility also has a RCRA permit for regulated units [RUs] from the Mississippi Department of Environmental Quality [MDEQ]. Earlier investigative and remedial work was conducted under an Administrative Order on Consent issued by MDEQ, and the RCRA permit. The HSWA permit builds on these earlier actions to put in place final corrective measures for the entire Site.

Description of Site Groundwater Quality and Monitoring

Various Volatile Organic Compounds [VOCs] have been detected in groundwater at the Site with Trichloroethene [TCE] and its daughter products [i.e., cis-1,2-dichloroethene [cis-1,2-DCE], 1,1-dichloroethene [1,1-DCE], and vinyl chloride [VC]], arsenic, lead, and chromium being the constituents of greatest potential concern. The extent of the TCE plume and its daughter products, as of October 2000, was delineated in the RFI Report. These plumes generally encompass the Main Plant area and extend downgradient and ultimately discharge to Riverdale Creek. The groundwater quality data show that impacts from various SWMUs and AOCs at the Site are commingled and become diffused in very close proximity to any given source. For example, tetrachloroethene, a constituent of concern, was observed at relatively lower concentrations in areas under the Sludge Lagoon, Equalization Lagoon, On-Site Landfill, and in the vicinity of GP-4 near Riverdale Creek. In general, the other constituents of concern, such as toluene, 1,1,2-trichloroethane [TCA], and 1,2-dichloroethane [DCA], appear in the vicinity of the Main Plant area. The plumes for the inorganics appear to be limited to the area from the Main Plant to the On-Site Landfill; however, they do not appear to extend

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to Riverdale Creek. Additionally, sporadic detections of bis[2-ethyl-hexyl] phthalate have also been observed at isolated locations. Based on these historic data, the primary constituents of concern [particularly in the vicinity of Riverdale Creek] are TCE and its degradation products.

In addition to the previous Site-wide groundwater sampling for the RFI, there is ongoing groundwater monitoring in connection with the Equalization Lagoon [a regulated unit]. The semi-annual groundwater sampling and analysis around the Lagoon is conducted in accordance with the facility's RCRA permit for the former Equalization Lagoon.

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A Site-wide groundwater-sampling event was conducted in November 2003 in accordance with the Performance Monitoring Plan appended to the Design Basis Report for the PRB. The EPA approved the Performance Monitoring Plan in June, 2003. After the initial sampling or "baseline" event, all monitoring wells will be sampled biennially [once every two years] on a Site-wide basis. The Site-wide sampling events will supplement the existing groundwater quality database for the Site and also serve to monitor on-going interim and final corrective measures at the Site.

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The Performance Monitoring Plan proposes fourteen [14] new monitoring wells to be installed to supplement the existing monitoring well network. The purpose of the additional monitoring wells is to provide supplemental groundwater quality and groundwater elevation monitoring in areas upgradient to, within, and downgradient of the PRB being evaluated for installation for Site-wide groundwater migration control. The wells will generally be installed as well couplets to allow for the monitoring of the upper and lower portions of the Upper Aquifer. Monitoring wells that are part of the performance monitoring for the PRB will be sampled and analyzed initially within one month of completion of the PRB installation and semi-annually afterwards.

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Description of Vapor Intrusion Assessment Measures

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At Grenada Manufacturing, the TCE and Toluene groundwater plumes travel underneath the northeast corner of the Main Plant Building. Grenada Manufacturing conducted a vapor intrusion assessment at the Main Plant Building located at the Site. This work was conducted to allow for the assessment of the potential for VOCs in the vapor state to enter the plant building from the soil and/or groundwater. Monitoring activities were performed in February 2003 under conditions thought to be conservative for these purposes (i.e., minimal ventilation). Ten of the eleven VOCs reported were found either below their target indoor air screening concentration or below their detection limit. Only TCE was detected above its risk-based target indoor air screening concentration. The current monitoring results do not exceed EPA's risk-based target levels. However, if current toxicity criteria change [the TCE criterion is currently under review and may be lowered] then the current monitoring results may fall outside EPA's risk range, and remedial action may be warranted. However, it should be noted that EPA's risk-based target levels and the observed concentrations were well below OSHA occupational exposure health and safety standards.

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Description of SWMUs and AOCs

The Future Action Status of all SWMUs and AOCs at the facility is listed in Appendix A of this document.

Summary of Site Risk

A Remedial Investigation [RI] completed in January 1994 identified the presence of trichloroethylene [TCE] and its degradation products, as well toluene and chromium in the soil and groundwater at the Site. A Baseline Risk Assessment was performed for soil and upper-site groundwater as part of the Supplemental RI Report prepared in March 1994. The Baseline Risk Assessment provided an evaluation of the potential threat to human health and the environment from the constituents of interest at the Site. The risk assessment identifies the constituents of interest and, through the exposure and toxicity assessments, characterizes the associated potential risk, assuming no action is taken at the Site. The Baseline Risk Assessment concluded

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that the Site poses only potential "low-level" threats for all media except for groundwater in the uppermost aquifer. The primary concern with respect affected groundwater is the migration of chlorinated ethenes and ethanes to Riverdale Creek on the west side of the Site. Toluene and chromium are also of concern, but are present at much lower concentrations than are the chlorinated VOCs and do not threaten Riverdale Creek.

The proposed corrective measures call for baseline monitoring and operational monitoring of corrective measures for constituents of concern. If offsite human health or ecological threats are detected or suspected in Riverdale Creek, EPA may require the facility to conduct human health and/or ecological risk assessments and/or meet appropriate surface water and sediment screening criteria.

Cleanup Goals

As written, this does not match the CMS. Therefore, we propose the following alternative language from the CMS.

In very broad terms, the overarching corrective action strategy for this Site shall be to protect human health and the environment from the effects of releases of hazardous waste or hazardous constituents. The Baseline Risk Assessment for the property established that, with one exception, the Site did not pose unacceptable human health risks to potential current or future receptors. The singular exception was the potential risk posed by hypothetical future use of the uppermost aquifer as a drinking water supply.

Mississippi has promulgated statewide groundwater quality standards, which are equivalent to the Maximum Contaminant Levels (MCLs) promulgated by the USEPA as primary drinking water standards. The Mississippi standards are provided in the following table for the constituents of interest at the Site.

Table 1.a. Groundwater CLEANUP GOALS-Chemicals of Concern in Groundwater

	Regulatory Standard MCL [µg/L] [µg/L]	Highest Level At Site
Arsenic	50	64[1]
Chromium	100	7,220[1]
Lead	15	43[1]
Benzene	5	9[1]
Bis[2-ethyl-hexyl] Phthalate	6	7[1]
1,2-Dichloroethane	5	44[1]
1,1-Dichloroethylene	7	99[1]
cis-1,2-Dichloroethylene	70	240,000[1]

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Tetrachloroethylene	5	290[1]
Toluene	1,000	2,200[1]
1,1,2-Trichloroethane	5	76[1]
Trichloroethylene	5	650,000[1]
Vinyl Chloride	2	6,600[1]

PARAMETER LIST DOES NOT MATCH THE CMS

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While the USEPA's groundwater protection and cleanup strategy for RCRA Corrective Action calls for progress toward the ultimate goal of returning impacted groundwater to its maximum beneficial use, the Agency also recognizes that restoration to drinking water quality may not always be achievable. Site and contaminant characteristics, and the limitations of available remediation technologies, make restoration an extremely challenging situation at this Site (i.e., technically impracticable).

The USEPA suggests using preliminary remediation goals (PRGs) for screening purposes at RCRA sites. For the constituents of interest at this Site, these PRGs are summarized in the following table.

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Table 1.b. SOIL CLEANUP GOALS-Chemicals of Concern in Soil

Region IX Preliminary Remediation Goal Industrial Soil Level	[mg/kg]	Highest At Site [mg/kg]
Arsenic	1.6	24.7
Chromium (III)	100,000	7,770[2]
Chromium (VI)	64	2,680[2]
Lead	750	110[3]
Benzene;	1.3	3.0[3]
Bis[2-ethyl-hexyl] Phthalate	120	not available
1,2-Dichloroethane	0.6	not available
1,1-Dichloreothylene	410	not available
1,2-dichloroethylene (cis)	150	64[3]
Tetrachloroethylene	3.4	11[3]
Toluene	520	84[3]
1,1,2-Trichloroethane	1.6	2.3[3]
Trichloroethylene	0.11	5,400[3]
Vinyl Chloride	0.75	13[3]

PARAMETER LIST DOES NOT MATCH THE CMS

1. RCRA Facility Investigation Report prepared for Grenada Manufacturing Facility, Grenada Mississippi, January 2001, Revised October 2001.

2. Assessment Report and Closure Plan for the Chrome Plating Line Area, Grenada Manufacturing, LLC Facility, Grenada Mississippi, January 2003.

3. Remedial Investigation Report, Randall Textron Plant Site, Grenada, Mississippi; Baseline Risk Assessment, January 1994

Constituent concentrations in soil in many areas of the Site, including those in the saturated zone, exceed one or more of these PRGs. Treatment or removing these soils to attempt to meet the PRGs is not necessary to adequately protect human health and the environment, nor is it practicable with available remediation technologies.

Based on the results of the various investigations and assessments performed at this Site, the following principal objectives were recommended in the CMS for corrective action at this site:

- Implement corrective measures which are protective of human health and the environment, based upon current potential exposures.
- For affected groundwater, which has migrated beyond the facility boundary (i.e., downgradient from the PRB), clean up to Mississippi groundwater quality standards.

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- Prevent further degradation of soil and groundwater with appropriate source control corrective measures. Utilize the PRB as a site-wide migration control measure.
- Comply with standards for management of waste during corrective measure implementation.
- Develop and implement use restrictions/institutional controls for Site soil and groundwater to prevent future exposures.
- Implement the approved Performance Monitoring Plan to track the progress of the corrective action program.

Evaluation of Corrective Measures

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Thirteen corrective measures technology options were identified in the Corrective Measures Study as potential remedies for the Site. The identified components, however, may only address certain site-specific areas [e.g., individual SWMUs or source areas, soil in the vadose zone, and site-wide groundwater]. The components were assembled in this manner to allow for more flexibility in selecting the corrective measures. The final selected corrective measures may be a combination of one or more of the components identified below.

No Further Action
Use Restrictions
Stabilization
Cover/Capping System
Sheet Pile Barrier
Permeable Reactive Barrier
Recirculating Wells Curtain
Non Aqueous Phase Liquid Identification/Recovery
Excavation and Off-Site Disposal
Excavation and On-Site Treatment with Soil Vapor Extraction
Excavation and On-Site Treatment with Low Temperature Thermal Desorption
In-Situ High Vacuum Multi phase Extraction
Natural Attenuation

The evaluation factors considered in the analysis of the corrective measures technologies are discussed in detail in the Corrective Measures Study Report dated August 2003. This report is available electronically. All thirteen alternatives were evaluated individually and compared to one another for each criterion in the required comparative analysis format.

Overall protection of human health and the environment, attainment of cleanup standards, control of sources of releases, and compliance with applicable standards for management of wastes are the key determinants for selection of an evaluated remedial component as a recommended Site corrective measure. The other criteria

[long-term reliability and permanence; reduction of toxicity, mobility, or volume; short-term effectiveness; practicality; cost; community acceptance; and state acceptance] require consideration due to potential tradeoffs that may exist among the components.

Final Corrective Measures

Based on the results of the CMS, the recommended corrective measures for this Site are:

1. **Additional Non Aqueous Phase Liquid Recovery at AOCs A and B and the Sludge Lagoon.**
2. **Construction of a high vacuum multi-phase extraction system at AOCs A and B.**
3. **Installation of a Sheet Pile Barrier upgradient of AOCs A and B.**
4. **Closure of the Sludge Lagoon using stabilization of the sludge and capping or covering of the remaining impacted soil.**
5. **Installation of a Permeable Reactive Barrier downgradient of the constituent plume.**
6. **Implementation of select Institutional Controls for the Site.**

Site specific pre-design data will be collected to address items 1 to 4. As this data becomes available, further evaluation of each option will be performed. **Technical Details of the Permeable Reactive Barrier can be found in the Design Basis Report, dated May 2001 and revised April 2003.**

Public Participation

The facility should explain what they have done and plan to do in the future to fulfill this requirement. The requirements for this are still being discussed

Bibliography

Remedial Investigation of the Randall Textron Automotive Company, Grenada Mississippi, EPA ID Number MSD 007037278, January 1994.

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RCRA Facility Assessment of Randall Textron, Grenada Mississippi, EPA ID Number MSD 007037278, October 1997.

HSWA Portion of the RCRA Permit, Textron Automotive Company, 635 Highway 332, Grenada Mississippi, EPA ID Number MSD 007037278, July 31, 1998.

RCRA Facility Investigation Report prepared for Grenada Manufacturing Facility, Grenada Mississippi, EPA ID Number MSD 007037278, January 2001, Revised October 2001.

Design Basis Report: Permeable Reactive Barrier Groundwater Interim Measure, Grenada Manufacturing Site, EPA ID Number MSD 007037278, Grenada Mississippi, May 2001, Revised April 2003.

Assessment Report and Closure Plan for the Chrome Plating Line Area, Grenada Manufacturing, LLC Facility, EPA ID Number MSD 007037278, Grenada Mississippi, January 2003.

Draft Indoor Air Monitoring Report, Grenada Manufacturing Site, Grenada Mississippi,
EPA ID Number MSD 007037278, April 2003.

Corrective Measures Study, Grenada Manufacturing LLC, EPA ID Number MSD 007037278, Grenada Mississippi, August 2003.

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The following cleanup criteria and for various media have been adopted by Grenada Manufacturing during the remedy selection process:

Groundwater	Maximum Contaminant Levels (MCLs) and Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
Soil	Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
Sediment	Site-Specific Risk-Based action levels calculated by Brown and Caldwell and National Oceanic Atmospheric Association screening levels
Surface Water	Site-Specific Risk-Based action levels calculated by Brown and Caldwell, Mississippi Water Quality Criteria, and Federal Water Quality Criteria.

The following tables list the Chemicals of Concern in Soil and Groundwater, the cleanup and remediation goals, and the highest observed level of each Chemical of Concern.

There are no tables for Sediment and Surface Water because significant contamination of sediment and surface water at the Site has

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not been observed.

Appendix A
Action Status of SWMUs and AOCs
GRENADA MANUFACTURING LLC, GRENADA, MISSISSIPPI

SWMU/AOC	TYPE OF UNIT	YEARS OF OPERATION	WASTES MANAGED	AFFECTED MEDIA	ACTION STATUS
SWMU 1 Less-Than-90-Day Drum Storage Area	Container Storage Area	Mid 1980s to Present	The unit managed used paint, paint waste, toluene (D001, F005), spent solvents, chromic acid sludge (D002, D007) and waste mineral spirits in 55-gallon drums for less than 90 days. Trichloroethylene still bottoms (F001) were managed in the unit until approximately 1992. Recovered toluene and trichloroethylene were also managed at the unit.	None	No Further Action at this time. The unit is regularly inspected by the MDEQ. Part of the RCRA operating permit.
SWMU 2 Equalization Lagoon	Surface Impoundment	1961 to 1994	The unit received roll forming department wastewater, boiler blow down, boil-off, butler wash, buff wash, alkaline rinse waters and cooling waters. Until the late 1970's, sanitary sewage from the facility was released to the unit. Until 1990, the unit received electroplating wastewaters containing hexavalent chromium (F006, D007).	Soil Groundwater	No Further Action at this time. Closed as a RCRA regulated unit with waste in place in 1994 in a lined, capped and monitored landfill cell. Part of the RCRA post-closure permit.
SWMU 3 On-Site Landfill	Landfill	1961 to 1967	The unit managed waste including buffing compounds, still bottoms from trichloroethylene recovery operations and paint sludges.	Soil Groundwater	No Further Action at this time. Waste excavated in 1996. Closed with some waste still in place. Residual contamination will be addressed by Monitored Natural Attenuation and the permeable reactive barrier.
SWMU 4 Sludge Lagoon	Surface Impoundment	1977 to Present	The clay-lined unit receives sludge generated in the Wastewater Treatment Plant Clarifier (SWMU 13B).	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed

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					by the Permeable Reactive Barrier.
SWMU 5 Former Solid Waste Incinerators	Incinerators	1961 to 1996	According to facility representatives only plant trash was burned in the units.	None	No evidence of a release. No Further Action at this time.
SWMU 6 Equipment Laydown Area	Laydown Area	1961 to Present	The unit stores spare equipment and parts that may be used in the future.	None	No evidence of a release. No Further Action at this time.
SWMU 7 Outfall Ditch	NPDES Outfall Ditch	1961 to Present	The unit receives the discharge from the Wastewater Treatment Plant (WWTP) and portions of the Drainage Ditches (SWMU 16). Prior to 1977, effluent from the Equalization Lagoon (SWMU 2) was also received by the Outfall Ditch.	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.
SWMU 8 Former Burn Area	Burn Area	1961 to Approximately 1974	According to facility representatives, packaging materials, paper, wood, sisal and cloth wheels, cafeteria waste and other miscellaneous refuse were burned in the unit.	None	No evidence of a release. No Further Action at this time.
SWMU 9 Sumps A, B, & C	Sumps	1961 to Present	The units collect waste hydraulic oils containing benzene, drawing compound, motor oils, compressor oil, metal shavings and lubricant from throughout the facility.	None	No evidence of a release. No Further Action at this time.
SWMU 10 Waste Oil Tank	Above-Ground Storage Tank	1970s to Present	The unit manages waste oil which includes hydraulic oils, drawing compounds, metal shavings, and lubricants. The tank has secondary containment.	None	No evidence of a release. The secondary containment around this unit must be inspected for rainwater collection and pumped every 3 months if there is more than 6 inches of water in the unit.
SWMU 11 Waste Oil Catch Pans	Catch Pans	Approximately 1961 to Present	The units collect hydraulic oils, drawing compound, motor oils, compressor oil, and lubricant from throughout the facility.	A, SS, GW, SW, S (Not Defined)	No Further Action at this time.

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SWMU 12 Wet Well	Inground Tank	1977 to Present	The unit manages corrosive alkaline washwaters (D002) generated in the facility operations, non-contact cooling water, mop water, boiler blow down and laboratory sink washwaters. From 1977 until 1993, the unit received a reduced chromium waste stream (D007) as well.	None	No Further Action at this time. Inspected and cleaned July 2, 2002. Permit will be modified to schedule inspection and maintenance every 5 years.	
SWMU 13 Wastewater Treatment Plant	Treatment Plant	1977 to Present	The units manage and treat wastewater generated in the facility's manufacturing processes as well as the water supernatant from the Sludge Lagoon (SWMU 4). The wastewater includes corrosive alkaline rinse waters, non-contact cooling water, mop water, boiler blow down and laboratory sink washwaters. From 1977 until 1993, a reduced chromium waste stream was also received by the unit.	Soil Groundwater	No evidence of a release. No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.	**Deleted:** Residual **Deleted:** remediated
SWMU 14 Chromium Destruct Pit	Chromium Reduction Unit/Holding Sump	1961 to 2002	The unit managed hexavalent chromium electroplating wastewater.	None	Clean closed in 2002.	**Deleted:** Closed
SWMU 15 Process Sewers	Sewer System	1961 to Present	The units transport wastewater that is primarily composed of alkaline rinse waters, non-contact cooling water, mop water, boiler blow down, storm water and laboratory wastewaters. In the past the units managed hexavalent chromium wastewater.	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.	**Deleted:** Until **Deleted:** T **Deleted:** S **Deleted:** R **Deleted:** remediated
SWMU 16 Drainage Ditches	Ditches	1961 to Present	The units collect site runoff and storm water from throughout the facility.	Soil Groundwater	No evidence of a release. No Further Action	**Deleted:** Until Taken out of Service, part of the Waste Water Treatment Plant. Any Residual contamination will be remediated by the Permeable Reactive Barrier.
SWMU 17 Former IDW Drum Storage Area	Storage Area	Early 1992 to 1993	The unit managed drums containing investigation derived waste (IDW), which included drilling mud, drill cuttings, purge/development water, decontamination water and trash. Some of the wastes managed were	None	No evidence of a release. No Further Action at this time.	

			deemed F002 and F005 hazardous wastes.		
SWMU 18 Buffing Sludge Basement	Storage Basement	1961 to Present	The unit collects non-hazardous buffing sludge generated during the wheel cover polishing operations.	None	No evidence of a release. No Further Action at this time.
SWMU 19 Buffing Sludge Rolloff	Rolloff Container	1985 to Present	The unit manages nonhazardous buffing sludge collected in the Buffing Sludge Basement (SWMU 18) and dust collected by the Cyclone Dust Collector (SWMU 22).	None	No evidence of a release. No Further Action at this time.
SWMU 20 Plant Waste Containers	Hoppers and Drums	1961 to Present	The units collect plant trash including used sisal and cloth wheels, paper, cafeteria waste, absorbent materials used to clean spills and other miscellaneous refuse.	None	No evidence of a release. No Further Action at this time.
SWMU 21 Parts Washers	Parts Washer	January 1990 to Present	The units manage spent solvents generated during the cleaning operation of parts.	None	No evidence of a release. No Further Action at this time.
SWMU 22 Cyclone Dust Collector	Air-Emissions Control Device	Approximately 1961 to Present	The unit managed the particulate emissions that are produced from the butler machines as they grind the metal product to create a finish. The unit has been removed.	None	No evidence of a release. No Further Action at this time.
SWMU 23 Biohazard Container	Container	1960s to Present	The unit stores biohazardous wastes generated at the first aid station. Wastes include bloody materials, cotton swabs, cups for ingested medicine, and surgical gloves.	None	No evidence of a release. No Further Action at this time.
SWMU 24 Satellite Accumulation Areas	Satellite Accumulation Drums	Approximately 1976 to Present	The units are collection points for waste toluene generated in the painting operations, spent paint filters, and waste paint rags. Toluene and TCE recovered from the recovery wells installed in the vicinity of the Former	None	No evidence of a release. No Further Action at this time.

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			Toluene Underground Storage Tank Area (AOC B) and the Former TCE Storage Area (AOC A), respectively, are also accumulated there.		
SWMU 25 Scrap Metal Rolloffs	Rolloff Containers	1960s to Present	The units collect scrap metal including cold roll and galvanized metal that result from a variety of manufacturing processes.	None	No evidence of a release. No Further Action at this time.
SWMU 26 Trash Compactor	Compactor	1996 to Present	The unit collects general plant trash including packaging materials, paper, wood, sisal and cloth wheels, cafeteria waste and other miscellaneous refuse.	None	No evidence of a release. No Further Action at this time.
SWMU 27 Former Chrome Plating Lines	Chromic Acid Plating Baths	1961 to 2002	The unit was used as a plating bath for wheel covers and other small parts.	Soil Groundwater	Waste left in place. Hexavalent Chromium contamination above industrial preliminary remediation goals has been left in place because it is under the main plant building and commingled with the TCE and toluene plumes. There may be a threat to indoor air if remediation is attempted as long as the main plant building exists. At present there is no evidence of chromium waste moving from under the main plant building. If this waste moves, it will be detected by downgradient monitoring wells and addressed by the Permeable Reactive Barrier. Future remediation of this location will be included in the facility's financial assurance plan. Continued monitoring will be required in the permit.
AOC A Former Trichloro-ethylene Storage Area	Contamination Area from Above Ground Tank Storage Area	Approximately 1973 to Present. Tanks were removed in the 1980's.	The area contains soil and groundwater contaminated with trichloroethylene.	Soil Groundwater Indoor Air	Source control and removal has taken place and will continue as long as feasible. Residual contamination will be addressed by the Permeable Reactive Barrier. There is potential for migration into indoor air from the TCE Plume which is under a portion of the Main Plant Building. One Indoor Air Survey was conducted and levels were below current guidelines for industrial exposure to TCE[the RfC was used, which is more stringent than OSHA PELs]. Indoor Air Sampling must be repeated every two years as long as TCE levels in Groundwater exceed EPA Regulatory Standards. Employees must be

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					informed if indoor air levels exceed OSHA PELs for any of the 11 constituents monitored. (What basis? This has not been discussed.).	Formatted: Highlight
AOC B Former Toluene Storage Tank Area	Contamination Area from former Underground Storage Tank	Late 1960s to Present. The tank was taken out of service in 1988.	The area contains soil and groundwater contaminated with toluene.	Soil Groundwater	Source control and removal has taken place and will continue as long as feasible. Residual contamination will be addressed by the Permeable Reactive Barrier.	Deleted: unit manages Deleted: Control Deleted: Removal Deleted: ¶ Deleted: remediated
AOC C Fuel Tank Farm Containment Area	Secondary Containment	1960s to 1994	AOC C was a set of tanks along the northeast side of the building. One tank contained sulfuric acid (not used since 1994), one contained sulfur dioxide (not used since 1994), one contained fuel oil #6 (not used since early 1970's), two contained fuel oil #2 (not used since early 1970's) and three propane tanks.	Soil Groundwater	No Further Action at this time. The tanks and secondary containment have been cleaned and removed.	Deleted: s Deleted: ¶ Deleted:

FACT SHEET: GRENADA MANUFACTURING CORRECTIVE MEASURES

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Introduction

This announcement is being published by the United States Environmental Protection Agency [USEPA or EPA] for the Grenada Manufacturing, LLC facility located at 635 Highway 332 in Grenada, Mississippi. The EPA ID number of this site is MSD 007 037 278. The plant property includes 48.6 acres bordered by the Illinois Central Gulf Railroad to the north and east, a swampy area to the south, an abandoned roadbed to the west, and Riverdale Creek to the northwest. (This has changed) Surrounding land use is mixed residential, industrial and agricultural. The facility is located in an industrial park near Memphis Junction in Grenada. This notice is being published to inform the public and to give the public an opportunity to comment on the proposed corrective measures to clean up hazardous waste contamination at the Grenada Manufacturing facility.

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Why Is Cleanup Needed?

The results of site-wide investigations conducted since the early 1990's indicate that Site contaminants have impacted several environmental media at the Site; soil, groundwater, surface water and air. These contaminants include: Trichloroethene; Cis-1,2-Dichloroethene; Vinyl Chloride; Tetrachloroethene; 1,1,2-Trichloroethane; 1,2-Dichloroethane; Benzene; Bis[2-ethyl-hexyl] Phthalate; Toluene; Chromium; Lead; and Arsenic. However, a Baseline Risk Assessment completed for the site established that the Site poses only low-level threats for all media (i.e., the Site does not pose unacceptable human health risks to potential current or future receptors), except use of groundwater in the uppermost groundwater for drinking water purposes (an unlikely scenario).

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How Do You Participate?

The EPA and Grenada Manufacturing are soliciting public review and comment on these site-wide corrective measures, prior to implementation. The final corrective measures will be incorporated into the Hazardous and Solid Waste Amendment [HSWA] permit for Grenada Manufacturing, issued by the USEPA.

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The public comment period for this draft permit and the proposed corrective measures will begin on the date that this notice is published in the newspaper. The public comment period will end 45 days thereafter.

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If requested during the public comment period, Grenada Manufacturing and EPA may hold a public meeting to respond to any oral comments. To request a hearing or to provide written comments, please contact:

Mr. Donald Webster
USEPA Region 4
61 Forsyth Street S.W.

Atlanta, GA 30303
(404) 562-8469
Webster.Donald@epa.gov <mailto:Webster.Donald@epa.gov>

The draft HSWA Permit, and various investigatory documents, including an Indoor Air Monitoring Report, can be obtained from Mr. Webster [most are available electronically]. Electronic copies of the same documents can also be obtained from the facility representative:

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Mr. Donald Williams
Grenada Manufacturing, LLC
635 Highway 332
Grenada, Mississippi 38901
(662) 226-1161 ext. 113
dwilliams@GrenadaMfg.com

An official Statement of Basis for the Corrective Measures, which is a technical summary document, is available for viewing or copying at the following libraries, or from Mr. Webster or Mr. Williams:

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Elizabeth Jones Library
1050 Fairfield Avenue
Grenada, MS 38901
(662) 226-2072

USEPA Region 4 Library
Sam Nunn Federal Building 9th Floor
61 Forsyth Street S.W.
Atlanta, GA 30303

If you have any questions, concerns, or official comments regarding this announcement, please feel free to call, write, or e-mail Mr. Webster.

BEFORE THE MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

This is an uncontrolled site order

Fine Tune this order

Needs Joint order

MISSISSIPPI COMMISSION ON ENVIRONMENTAL QUALITY

COMPLAINANT

VS.

[RESPONDENT]

RESPONDENT

Order No.

an agreed ~~order~~ order that does blah blah blah

RESTRICTIVE USE AGREED

ORDER

COME NOW the Mississippi Commission on Environmental Quality (Commission) and [RESPONDENT] (Respondent) in the above captioned cause agree as follows:

1. The purpose of this Restrictive Use Agreed Order is to restrict the use and activities on the Site described below to insure protection of human health and the environment.

2. The Respondent has an interest in a tract of land located [SITE LOCATION] known as the "[SITE NAME] Restricted Area" and hereafter referred to as the "Site." Attachment I is a survey plat depicting the boundaries of the Site. A legal description of the Site follows:

[SITE LEGAL DESCRIPTION]

3. The Site is contaminated with [volatile organic compounds]) at levels in excess of the Target Remediation Goals (TRGs) as established by the Mississippi Department of Environmental Quality (MDEQ).

4. The staff of the Commission has evaluated this Restrictive Use Agreed Order and believes once the requirements of it have been completed that (1) the Site will be protective of the public health and the environment and (2) no further corrective action will be required at this time.

5. The following is a description of all restrictions and requirements for the Site:

(a) There shall be no excavating, drilling or other activities that could create exposure to contaminated media without prior approval from MDEQ.

(b) The groundwater at the Site shall not be used without prior approval from MDEQ;

(c) All monitoring wells at the Site shall be protected and maintained. In the event that a monitoring well is destroyed or damaged, a plan for repair, reinstallation or abandonment of the well (s) must be submitted to MDEQ for approval within 30 days after a well is destroyed or damaged;

(d) No wells shall be installed without prior approval from MDEQ;

(e) All required groundwater monitoring shall be conducted as described in the approved Compliance Monitoring Plan, dated [CMP DATE], unless otherwise approved by MDEQ;

(f) All required corrective action shall be conducted as described in the approved Corrective Action Plan, dated [CMP DATE], unless otherwise approved by MDEQ;

(g) Any necessary corrective action required following completion of the Corrective Action Plan in (f) above shall be implemented as described in the approved Contingency Plan, dated [CP DATE], unless otherwise approved by MDEQ;

(h) A sign of a size, shape, construction, and layout approved by MDEQ, shall be posted at the physical location of the site and shall read as follows:

STOP - CALL BEFORE YOU DIG
(601) 961-5171
Request to Speak with Someone in the Assessment Remediation Branch
Regarding [SITE NAME]

(i) All required institutional controls shall be implemented;

(j) Financial Assurance in an amount sufficient to implement the Contingency Plan, dated [CP DATE] shall be available, unless waived by MDEQ. Cost estimates and duration may be adjusted on a periodic basis with the approval of MDEQ; and

(k) Beginning on [DATE], and annually thereafter, Respondent shall submit certification in a form required by MDEQ that all the requirements listed in #5 (a) through (j) have been maintained. The annual certification must include a list of all surface owners and

leaseholders of the Site.

6. Respondent shall retain responsibility for the requirements listed in #5 above, until the Commission approves the transfer of those responsibilities to another party (e.g., the prospective purchaser) by entering into an Agreed Order with the other party.

7. Prior to any change in use of the Site or any portion of the Site, notice shall be given to and approval obtained from the MDEQ.

8. Notice must be provided to MDEQ 30 days prior to any property transaction involving the Site. Any conveyance must contain as covenants the requirements listed in #5 with a statement that the covenants run with the land and continue into perpetuity unless otherwise ordered by the Commission.

9. Within fifteen (15) days after execution of this Restrictive Use Agreed Order, Respondent shall file the Restrictive Use Notice, as approved by MDEQ, in the office of the Chancery Clerk of the County in which the Site is located for recording onto the land deed records in the appropriate sectional index.

10. Within forty-five (45) days after execution of this Restrictive Use Agreed Order, the Respondent is required to submit to MDEQ certification signed by the Chancery Clerk of the County in which the Site is located that the requirements under paragraph 9 of this Restrictive Use Agreed Order have been completed.

11. Nothing in this Restrictive Use Agreed Order shall be construed to convey or determine any interest in property.

12. Nothing in this Restrictive Use Agreed Order shall be construed to be an allocation of costs or an indemnification by the State, MDEQ, or the Commission.

13. Nothing in this Restrictive Use Agreed Order shall limit the rights of the MDEQ or the Commission in the event Respondent fails to comply with this Restrictive Use Agreed Order. The Restrictive Use Agreed Order shall be strictly construed to apply to those matters expressly resolved herein.

14. Nothing contained in this Restrictive Use Agreed Order shall limit the rights of Complainant to take enforcement or other actions against Respondent for violations not addressed herein and for future violations of environmental laws, rules, and regulations.

15. This Restrictive Use Agreed Order does not resolve any issues regarding liability and/or penalties for any violation of any federal and/or state order,

permit, law, rule and/or regulation. The Commission specifically reserves any such action.

16. Respondent understands and acknowledges that it is entitled to an evidentiary hearing before the Commission pursuant to Section 49-17-31 of the Mississippi Code Annotated (Supp. 1996), and that it has made an informed waiver of that right.

So ORDERED and AGREED, this the _____ day of _____, 2003.

Charles H. Chisolm
Executive Director
Mississippi Commission on
Environmental Quality

AGREED, this the _____ day of _____, 2003.

BY:

TITLE:

[COMPANY]

-

[Insert acknowledgment from state law]

POPULATION DENSITY AROUND GRENADA MANUFACTURING LLC, MISSISSIPPI

- Grenada Manufacturing
- 1, 3, 5mi. Buffer Zones
- Major Streams
- Railroads
- County Boundaries
- Indian Lands

Population Density (per sq-mi)

- 0 - 100
- 101 - 250
- 250 - 500
- 501 - 1000
- 1001 - 5000
- >5000

N

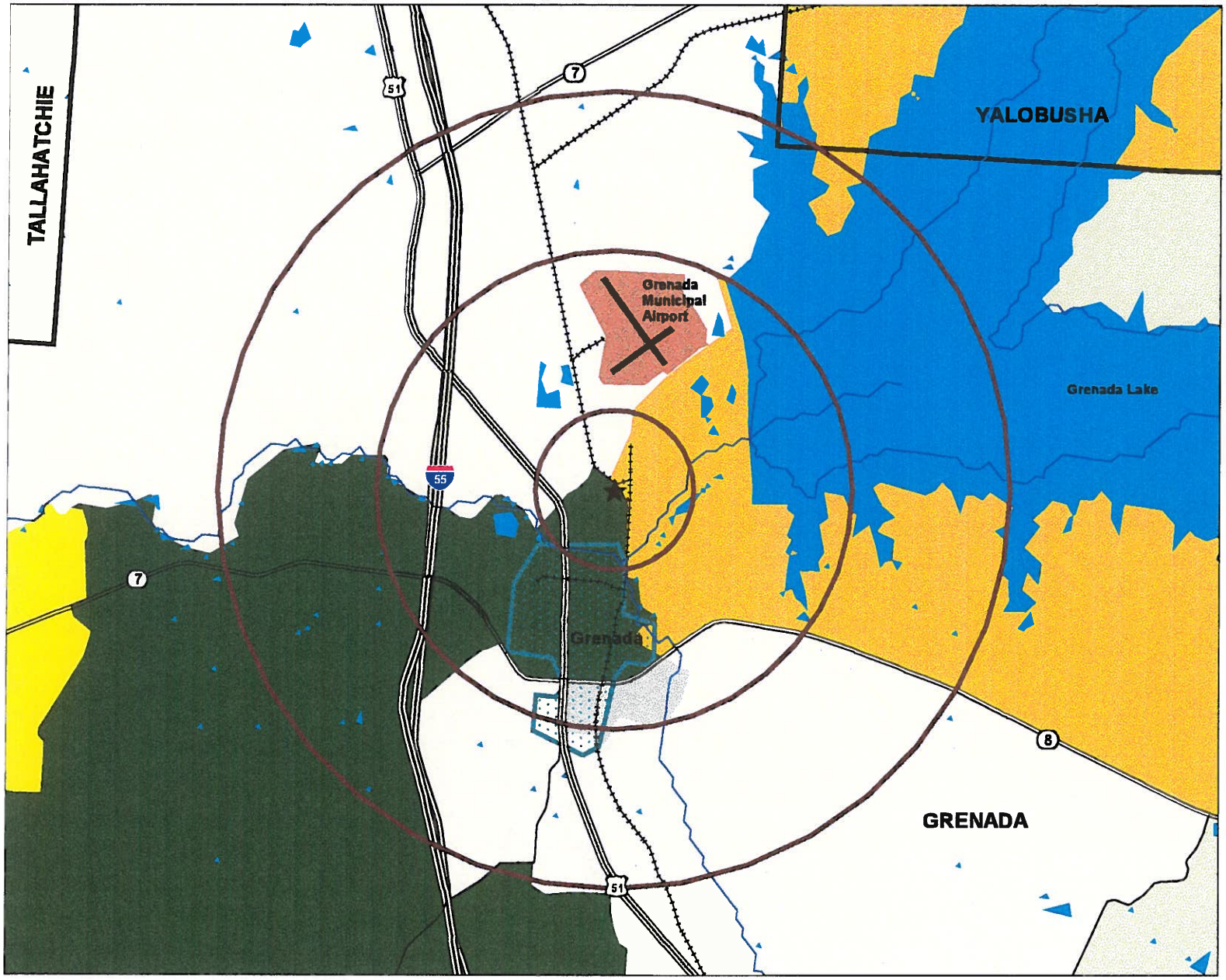
0.7 0 0.7 1.4 Miles

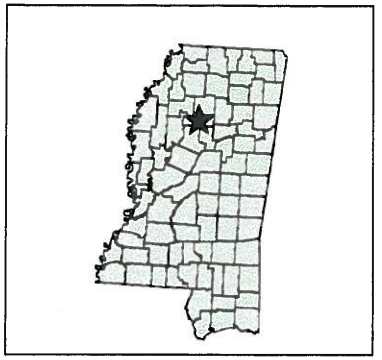
Source: 2000 U.S. Census Population and Housing Summary Tape File 3 (STF3) Data.
Aggregated to Block Group Level.

Relative State Minority Threshold: 47.08%
Relative State Low Income Threshold (20K): 39.55%

EPA REGION 4
OFFICE OF ENVIRONMENTAL AACOUNTABILITY

MINORITY PERCENTAGES AROUND GRENADA MANUFACTURING LLC, MISSISSIPPI





Grenada Manufacturing
1, 3, 5mi. Buffer Zones
Major Streams
Railroads
County Boundaries

% Minority
- 0 - 10
- 10.01 - 20
- 20.01 - 30
- 30.01 - 40
- 40.01 - 50
- >50

N

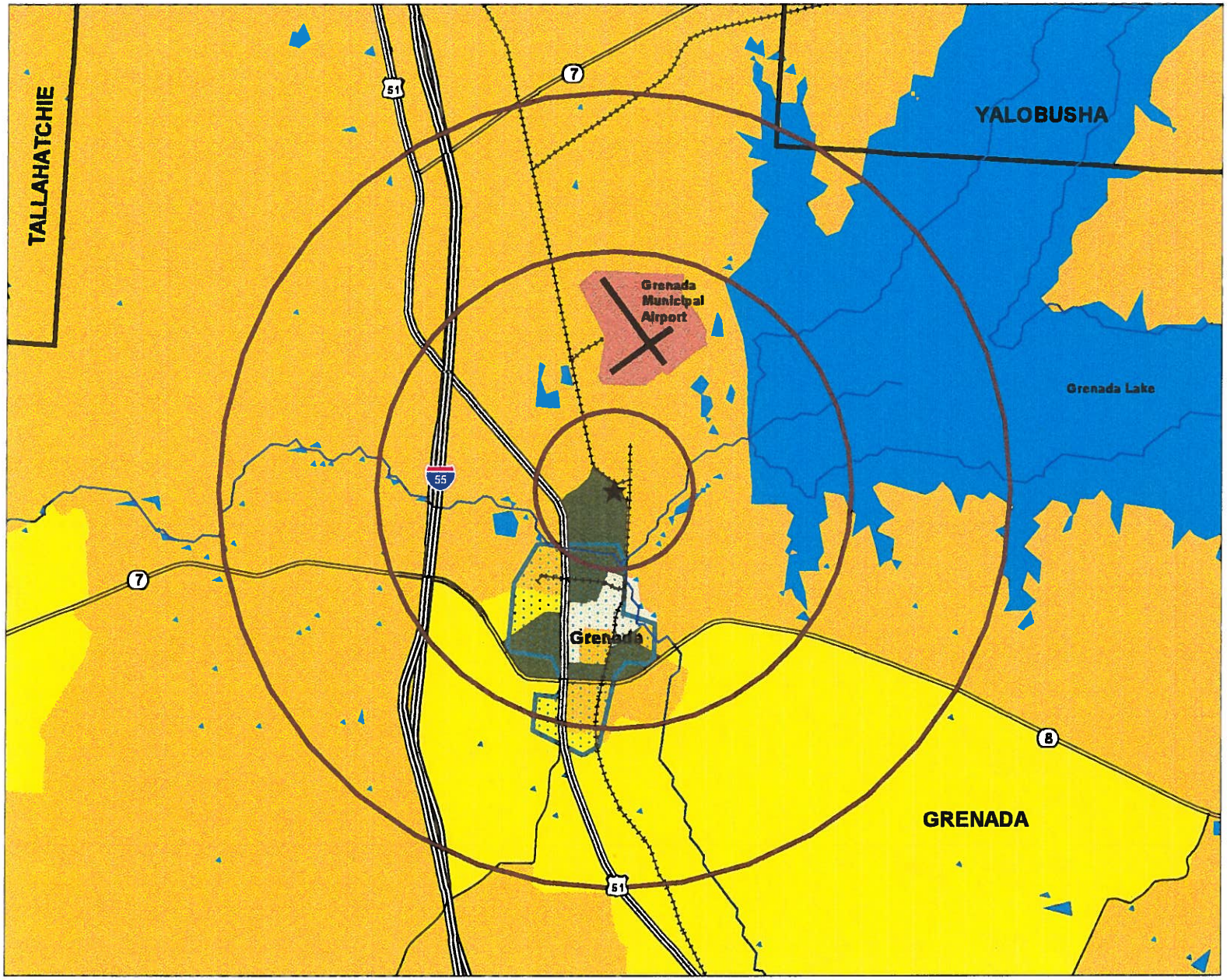
0.7 0 0.7 1.4 Miles

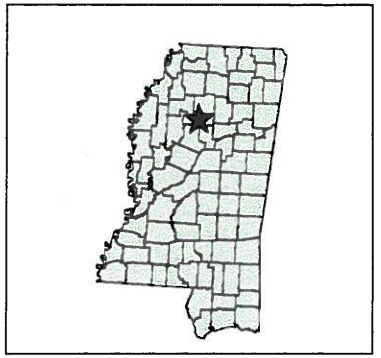
Source: 2000 U.S. Census Population and Housing Summary Tape File 3 (STF3) Data.
Aggregated to Block Group Level.

Relative State Minority Threshold: 47.08%
Relative State Low Income Threshold (20K): 39.55%

EPA REGION 4
OFFICE OF ENVIRONMENTAL AACOUNTABILITY

LOW INCOME PERCENTAGES AROUND GRENADA MANUFACTURING LLC, MISSISSIPPI





★ Grenada Manufacturing
1, 3, 5mi. Buffer Zones
Major Streams
Railroads
County Boundaries

% Low Income
0 - 10
10.01 - 20
20.01 - 30
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40.01 - 50
>50

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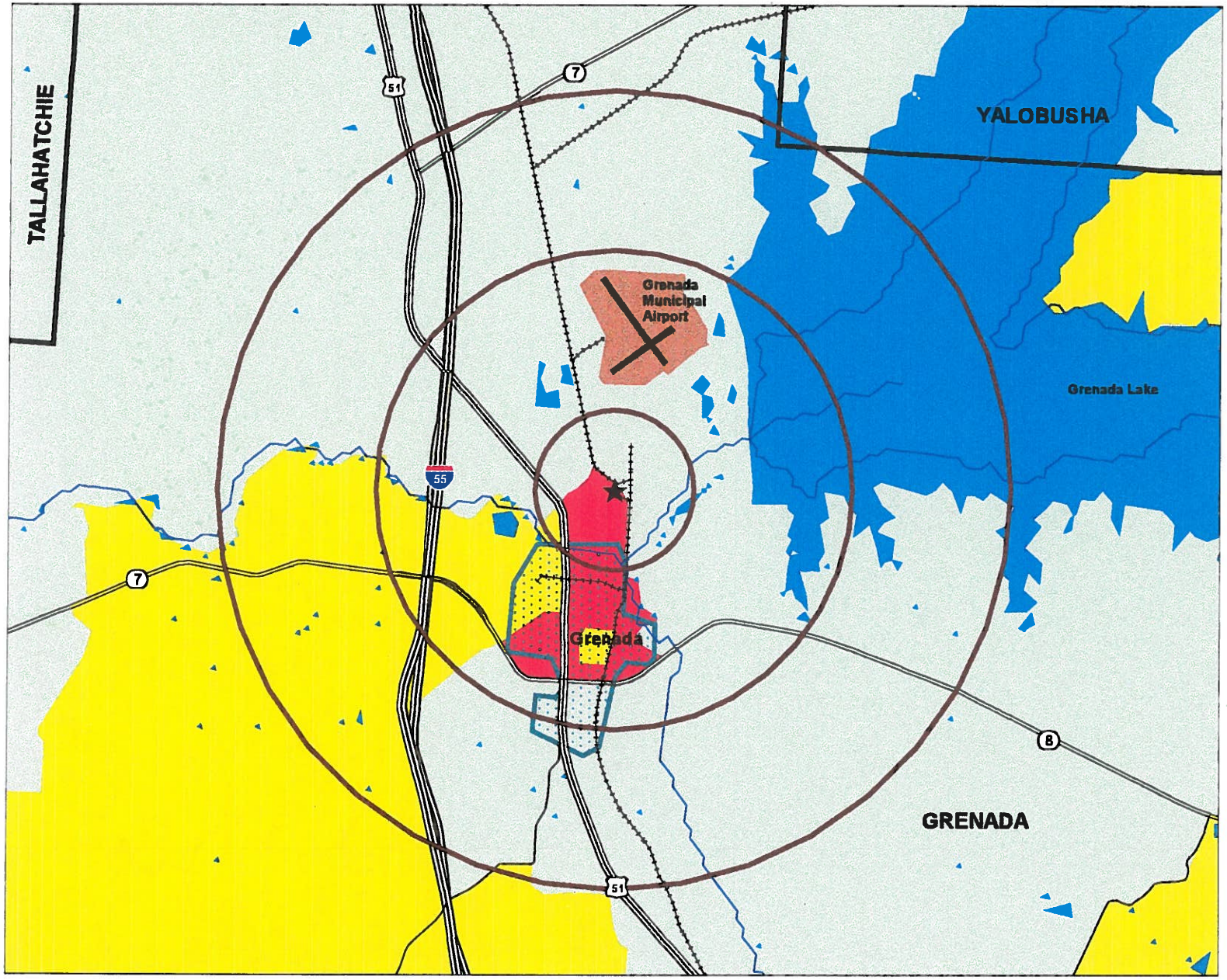
0.7 0 0.7 1.4 Miles

Source: 2000 U.S. Census Population and Housing Summary Tape File 3 (STF3) Data.
Aggregated to Block Group Level.

Relative State Minority Threshold: 47.08%
Relative State Low Income Threshold (20K): 39.55%

EPA REGION 4
OFFICE OF ENVIRONMENTAL AACOUNTABILITY

POTENTIAL EJ AREAS AROUND GRENADA MANUFACTURING LLC, MISSISSIPPI



Grenada Manufacturing
1, 3, 5mi. Buffer Zones
Major Streams
Railroads
County Boundaries
Indian Lands

Potential EJ Areas
Low Income
Minority
Minority/Low Income
Non-EJ Areas

N

0.7 0 0.7 1.4 Miles

Source: 2000 U.S. Census Population and Housing Summary Tape File 3 (STF3) Data.
Aggregated to Block Group Level.

Relative State Minority Threshold: 47.08%
Relative State Low Income Threshold (20K): 39.55%

EPA REGION 4
OFFICE OF ENVIRONMENTAL AACOUNTABILITY

SWMU 7
OUTFALL DITCH

SWMU 13
WASTEWATER TREATMENT
PLANT

SWMU 14
DESTRUCT PIT

AOC B
FORMER TOLUENE
UST AREA

AOC A
FORMER TCE
STORAGE AREA

SWMU 12
WET WELL

SWMU 15
PROCESS SEWERS

S 43°15'17" E
150.25'

S 56°47'28" E
837.42'

N 88°30'00" W
222.50'

N 65°54'29" E
611.07'

OUTFALL DITCH

WASTEWATER TREATMENT
PLANT DISCHARGE

EQUALIZATION
LAGOON

SLUDGE
LAGOON

CHROMIUM
REDUCTION PIT

FORMER TOLUENE
STORAGE AREA

MAIN PLANT BUILDING

WAREHOUSE
BLDG. NO. 1

ON-SITE
LANDFILL

BAFFEALL

PARCEL I
AREA = 10.60 ± AC.

PARCEL II
AREA = 32.31 ± AC.

GOAT HILLS

SITE DITCH

STAFF GAUGE
SG-16

463.6' R

GRENADA

NE1/4

SW1/4

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LEGEND

- Monitoring Well
- Geoprobe Piezometer
- Groundwater Flow Direction
- Surface Water Flow Direction

PRIORITY SWMUs

12–WET WELL
13–WASTEWATER TREATMENT PLANT
14–CHROME DESTRUCT PIT
15–PROCESS SEWERS

PRIORITY AOCs

A–FORMER TRICHLOROETHYLENE STORAGE AREA
B–FORMER TOLUENE UNDERGROUND STORAGE AREA

SOURCE: MAP PREPARED BY ALMON ASSOCIATES, 1993. WELL LOCATIONS SHOWN ARE APPROXIMATE.

250 0 250 500
SCALE FEET

FIGURE 1–2
SITE MAP SHOWING LOCATIONS OF PRIORITY SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN
GRENADA MANUFACTURING, LLC PLANT
GRENADA, MISSISSIPPI
19071.001 05/01

BROWN AND CALDWELL Nashville, Tennessee

DRAWING NO.: 19071-011 DATE: 05/11/01 PLOT SCALE 1=250

Appendix A
Action Status of SWMUs and AOCs
GRENADA MANUFACTURING LLC, GRENADA, MISSISSIPPI

SWMU/AOC	TYPE OF UNIT	YEARS OF OPERATION	WASTES MANAGED	AFFECTED MEDIA	ACTION STATUS
SWMU 1 Less-Than-90-Day Drum Storage Area	Container Storage Area	Mid 1980s to Present	The unit managed used paint, paint waste, toluene (D001, F005), spent solvents, chromic acid sludge (D002, D007) and waste mineral spirits in 55-gallon drums for less than 90 days. Trichloroethylene still bottoms (F001) were managed in the unit until approximately 1992. Recovered toluene and trichloroethylene are also managed at the unit.	None	No Further Action at this time. The unit is regularly inspected by the MDEQ. Part of the RCRA operating permit.
SWMU 2 Equalizatio n Lagoon	Surface Impoundment	1961 to 1994	The unit received roll forming department wastewater, boiler blow down, boil-off, butler wash, buff wash, alkaline rinse waters and cooling waters. Until the late 1970's, sanitary sewage from the facility was released to the unit. Until 1990, the unit received electroplating wastewaters containing hexavalent chromium (F006, D007).	Soil Groundwater	No Further Action at this time. Closed as a RCRA regulated unit with waste in place in 1994 in a lined, capped and monitored landfill cell. Part of the RCRA post closure permit.
SWMU 3 On-Site Landfill	Landfill	1961 to 1967	The unit managed waste including buffing compounds, still bottoms from trichloroethylene recovery operations and paint sludges.	Soil Groundwater	No Further Action at this time. Waste excavated in 1996. Closed with some waste still in place. Residual contamination will be addressed by Monitored Natural Attenuation and the permeable reactive barrier.
SWMU 4 Sludge Lagoon	Surface Impoundment	1977 to Present	The clay lined unit receives sludge generated in the Wastewater Treatment Plant Clarifier (SWMU 13B).	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.
SWMU 5 Former Solid Waste Incinerators	Incinerators	1961 to 1996	According to facility representatives only plant trash was burned in the units.	None	No evidence of a release. No Further Action at this time.

SWMU 6 Equipment Laydown Area	Laydown Area	1961 to Present	The unit stores spare equipment and parts that may be used in the future.	None	No evidence of a release. No Further Action at this time.
SWMU 7 Outfall Ditch	NPDES Outfall Ditch	1961 to Present	The unit receives the discharge from the Wastewater Treatment Plant (WWTP) and portions of the Drainage Ditches (SWMU 16). Prior to 1977, effluent from the Equalization Lagoon (SWMU 2) was also received by the Outfall Ditch.	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressee by the Permeable Reactive Barrier.
SWMU 8 Former Burn Area	Burn Area	1961 to Approximately 1974	According to facility representatives, packaging materials, paper, wood, sisal and cloth wheels, cafeteria waste and other miscellaneous refuse were burned in the unit.	None	No evidence of a release. No Further Action at this time.
SWMU 9 Sumps A, B, & C	Sumps	1961 to Present	The units collect waste hydraulic oils containing benzene, drawing compound, motor oils, compressor oil, metal shavings and lubricant from throughout the facility.	None	No Further Action at this time. No evidence of a release.
SWMU 10 Waste Oil Tank	Above-Ground Storage Tank	1970s to Present	The unit manages waste oil which includes hydraulic oils, drawing compounds, metal shavings, and lubricants. The tank has secondary containment.	None	No evidence of a release. The secondary containment around this unit must be inspected for rainwater collection and pumped every 3 months if there is more than 6 inches of water in the unit.
SWMU 11 Waste Oil Catch Pans	Catch Pans	Approximately 1961 to Present	The units collect hydraulic oils, drawing compound, motor oils, compressor oil, and lubricant from throughout the facility.	Air, Surface Soils, Ground Water, Surface Water, Surface Soils	No evidence of a release. No Further Action at this time.
SWMU 12 Wet Well	Inground Tank or Large Sump	1977 to Present	The unit manages corrosive alkaline washwaters (D002) generated in the facility operations, non-contact cooling water, mop water, boiler blow down and laboratory sink washwaters. From 1977 until 1993, the unit received a reduced chromium waste stream (D007) as well.	None	No Further Action at this time. Inspected and cleaned July 2, 2002. Permit will be modified to schedule inspection and maintenance every 5 years.

SWMU 13 Wastewater Treatment Plant	Treatment Plant	1977 to Present	The units manage and treat wastewater generated in the facility's manufacturing processes as well as the water supernatant from the Sludge Lagoon (SWMU 4). The wastewater includes corrosive alkaline rinse waters, non-contact cooling water, mop water, boiler blow down and laboratory sink washwaters. From 1977 until 1993, a reduced chromium waste stream was also received by the unit.	Soil Groundwater	No evidence of a release. No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.
SWMU 14 Chromium Destruct Pit	Chromium Reduction Unit/Holding Sump	1961 to 2002	The unit managed hexavalent chromium electroplating wastewater.	None	Clean closed in 2002.
SWMU 15 Process Sewers	Sewer System	1961 to Present	The units transport wastewater that is primarily composed of alkaline rinse waters, non-contact cooling water, mop water, boiler blow down, storm water and laboratory wastewaters. In the past the units managed hexavalent chromium wastewater.	Soil Groundwater	No Further Action until taken out of service, part of the Waste Water Treatment Plant. Any residual contamination will be addressed by the Permeable Reactive Barrier.
SWMU 16 Drainage Ditches	Ditches	1961 to Present	The units collect site runoff and storm water from throughout the facility.	Soil Groundwater	No Further Action at this time. No evidence of a release.
SWMU 17 Former IDW Drum Storage Area	Storage Area	Early 1992 to 1993	The unit managed drums containing investigation derived waste (IDW), which included drilling mud, drill cuttings, purge/development water, decontamination water and trash. Some of the wastes managed were deemed F002 and F005 hazardous wastes.	None	No Further Action at this time. No evidence of a release.
SWMU 18 Buffing Sludge Basement	Storage Basement	1961 to Present	The unit collects non-hazardous buffing sludge generated during the wheel cover polishing operations.	None	No evidence of a release. No Further Action at this time.

SWMU 19 Buffing Sludge Rolloff	Rolloff Container	1985 to Present	The unit manages nonhazardous buffing sludge collected in the Buffing Sludge Basement (SWMU 18) and dust collected by the Cyclone Dust Collector (SWMU 22).	None	No Further Action at this time. No evidence of a release.
SWMU 20 Plant Waste Containers	Hoppers and Drums	1961 to Present	The units collect plant trash including used sisal and cloth wheels, paper, cafeteria waste, absorbent materials used to clean spills and other miscellaneous refuse.	None	No Further Action at this time. No evidence of a release.
SWMU 21 Parts Washers	Parts Washer	January 1990 to Present	The units manage spent solvents generated during the cleaning operation of parts.	None	No Further Action at this time. No evidence of a release.
SWMU 22 Cyclone Dust Collector	Air-Emissions Control Device	Approximately 1961 to Present	The unit managed the particulate emissions that are produced from the butler machines as they grind the metal product to create a finish. The unit has been removed.	None	No Further Action at this time. No evidence of a release.
SWMU 23 Biohazard Container	Container	1960s to Present	The unit stores biohazardous wastes generated at the first aid station. Wastes include bloody materials, cotton swabs, cups for ingested medicine, and surgical gloves	None	No Further Action at this time. No evidence of a release.
SWMU 24 Satellite Accumulation Areas	Satellite Accumulation Drums	Approximately 1976 to Present	The units are collection points for waste toluene generated in the painting operations, spent paint filters, and waste paint rags. Toluene and TCE recovered from the recovery wells installed in the vicinity of the Former Toluene Underground Storage Tank Area (AOC B) and the Former TCE Storage Area (AOC A), respectively, are also accumulated there.	None	No Further Action at this time. No evidence of a release.
SWMU 25 Scrap Metal Rolloffs	Rolloff Containers	1960s to Present	The units collect scrap metal including cold roll and galvanized metal that result from a variety of manufacturing processes.	None	No Further Action at this time. No evidence of a release.
SWMU 26 Trash Compactor	Compactor	1996 to Present	The unit collects general plant trash including packaging materials, paper, wood, sisal and cloth wheels, cafeteria waste and other miscellaneous refuse.	None	No Further Action at this time. No evidence of a release.

SWMU 27 Former Chrome Plating Lines	Chromic Acid Plating Baths	1961 to 2002	The unit was used as a plating bath for wheel covers and other small parts.	Soil Groundwater	Waste left in place. Hexavalent Chromium contamination above industrial preliminary remediation goals has been left in place because it is under the Main Plant Building and com-mingled with the TCE and toluene plumes. There may be a threat to indoor air if remediation is attempted as long as the Main Plant Building exists. At present there is no evidence of chromium waste moving from under the main plant building. If this waste moves, it will be detected by downgradient monitoring wells and addressed by the Permeable Reactive Barrier. Future remediation of this location will be included in the facility's financial assurance plan. Continued monitoring will be required in the permit and an Institutional Control will be established.
AOC A Former Trichloro-ethylene Storage Area	Contaminatio n Area from Above Ground Tank Storage Area	Approximate ly 1973 to Present. Tanks were removed in the 1980's.	The area contains soil and groundwater contaminated with trichloroethylene.	Soil Groundwater Indoor Air	Source control and removal have taken place and will continue as long as feasible. Residual contamination will be addressed by the Permeable Reactive Barrier. There is a potential for migration into indoor air from the TCE Plume which is under a portion of the Main Plant Building. One indoor air survey was conducted and levels were below current guidelines for industrial exposure to TCE[the RfC was used, which is more stringent than OSHA PELs].
AOC B Former Toluene Storage Tank Area	Contaminatio n Area from former Underground Storage Tank	Late 1960s to Present. The tank was taken out of service in 1988.	The area contains soil and groundwater contaminated with toluene.	Soil Groundwater	Source control and removal have 5taken place and will continue as long as feasible. Residual contamination will be addressed by the Permeable Reactive Barrier.
AOC C Fuel Tank Farm Containment Area	Secondary Containment	1960s to 1994	AOC C was a set of tanks along the northeast side of the building. One tank contained sulfuric acid (not used since 1994), one contained sulfur dioxide (not used since 1994), one contained fuel oil #6 (not used since early 1970's), two contained fuel oil #2 (not used since early 1970's) and three propane tanks.	Soil Groundwater	No Further Action at this time. The tanks and secondary containment have been cleaned and removed.

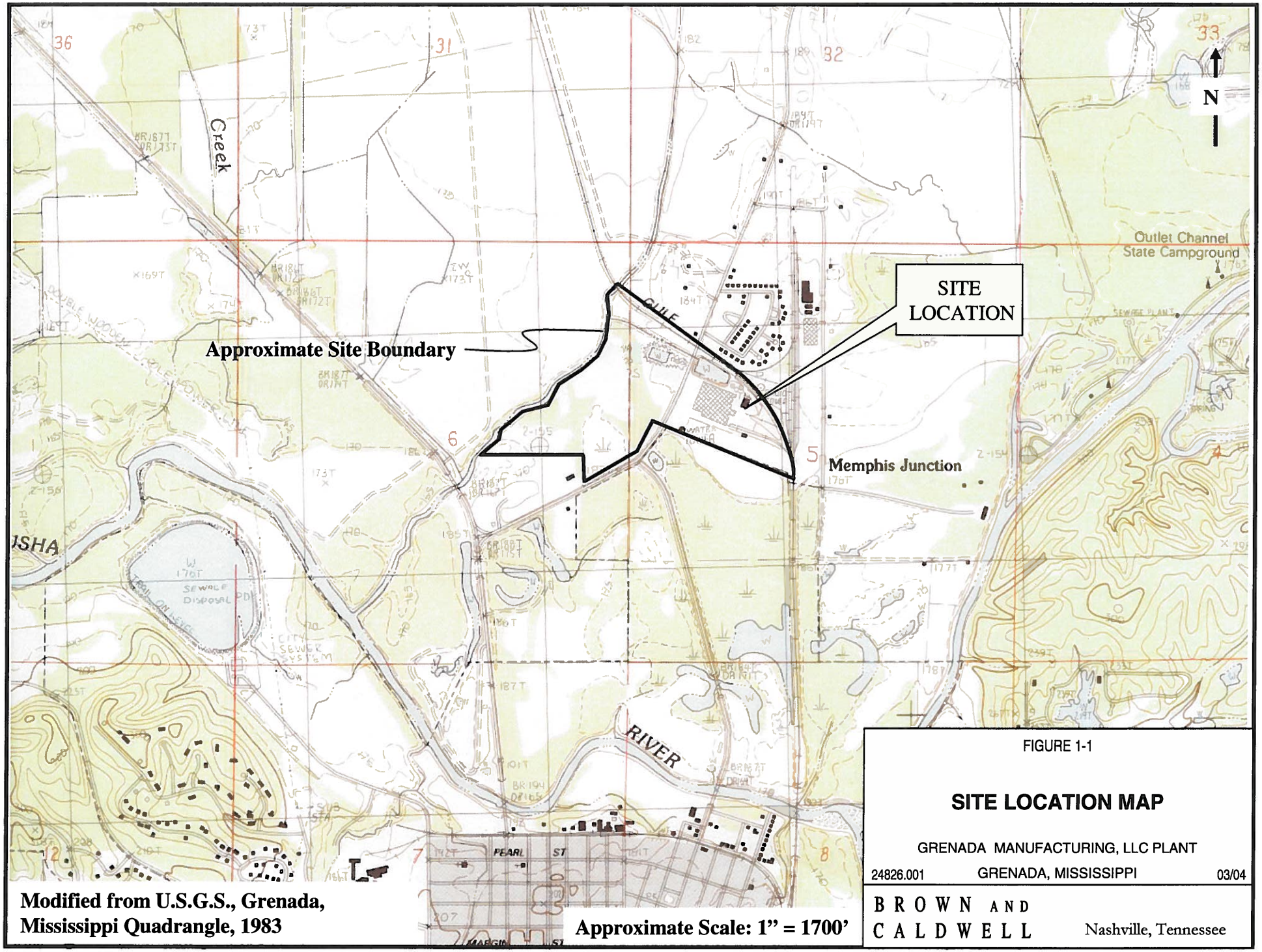

FIGURE 1-1

SITE LOCATION MAP

GRENADA MANUFACTURING, LLC PLANT

24826.001 GRENADA, MISSISSIPPI 03/04

BROWN AND CALDWELL Nashville, Tennessee

Statement of Basis for the Remedy GrenadaManufacturing LCC, Grenada Mississippi

Introduction and Facility Background

This Statement of Basis [SB] is being published for the Grenada Manufacturing, LLC facility [Site] located at 635 Highway 332 in Grenada, Mississippi. The RCRA ID number of this site is MSD 007 037 278. Rockwell Automotive North America [now Arvin Meritor] Inc. operated a wheel cover manufacturing facility in Grenada, Mississippi from 1966 to 1985 before selling the operations and property to Textron Automotive Company, formerly Randall Textron, who then sold the operations and property to Grenada Manufacturing, LLC in 1999. Grenada Manufacturing, LLC [the Permittee] continues to operate the wheel cover plant but has made several modifications to the product line produced, including the elimination of the chrome plating line for wheel covers.

The plant property includes approximately 100 acres bisected by State Highway 332. The portion of the site east of the highway is bordered by the Illinois Central Gulf Railroad to the north and east, a swampy area to the south, and the highway to the west. The area west of Highway 332 is bordered by the Illinois Central Gulf Railroad to the north, residential property to the south, the highway to the east, and Riverdale Creek to the west. [see Figure 1].

Questions and Answers for the Public

What Is the Purpose of a Statement of Basis?

This Statement of Basis has been developed by the Resource Conservation and Recovery Act [RCRA] program, in order to inform the public and give the public an opportunity to comment on the proposed corrective measures to clean up contamination at the Grenada Manufacturing facility.

Why Is Cleanup Needed?

The results of the RCRA Facility Investigation indicated that site contaminants had impacted several environmental media at the site; soil, groundwater, and air. These contaminants included the following: Trichloroethene; Cis-1,2-Dichloroethene; Vinyl Chloride; Tetrachloroethene; 1,1,2-Trichloroethane; 1,2-Dichloroethane; Benzene; Bis[2-ethyl-hexyl] Phthalate; Toluene; Chromium; Lead; and Arsenic. However, a Baseline Risk Assessment completed for the Site established that the Site poses only low-level threats for all media (i.e., the Site does not pose unacceptable human health risks to

potential current or future receptors), except use of groundwater in the upper most aquifer for drinking water purposes and construction worker exposure at SWMU 27.

How Do You Participate?

The EPA and Grenada Manufacturing are soliciting public review and comment on this SB prior to implementation of the final corrective measures. The final corrective measures will be incorporated into the Hazardous and Solid Waste Amendment [HSWA] permit for Grenada Manufacturing.

The public comment period for this SB and the proposed corrective measures will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 60 days thereafter.

If requested during the Public Comment period, Grenada Manufacturing and EPA will hold a public meeting to respond to any oral comments. To request a hearing or to provide written comments, please contact:

Mr. Donald Webster
USEPA Region 4
61 Forsyth Street S.W.
Atlanta, GA 30303
(404) 562-8469
Webster.Donald@epa.gov <mailto:Webster.Donald@epa.gov>

The HSWA Permit, the RCRA Facility Assessment Report, the RCRA Facility Investigation Report, the Interim Measures Report, the Corrective Measures Study Report and the Indoor Air Monitoring Report can be obtained from Mr. Webster. All except the RCRA Facility Assessment Report are available electronically.

This Statement of Basis for the Corrective Measures is available for viewing or copying at the following libraries:

Elizabeth Jones Library
1050 Fairfield Avenue
Grenada, MS 38901
(662) 226-2072

USEPA Region 4 Library
Sam Nunn Federal Building 9th Floor
61 Forsyth Street S.W
Atlanta, GA 30303

It is also available for viewing in Adobe Acrobat format on EPA Region 4's website at: http://www.epa.gov/region4/index.html

Electronic copies of the same documents in Adobe Acrobat format can also be obtained from the facility representative:

Mr. Donald Williams
Grenada Manufacturing, LLC
635 Highway 332
Grenada, Mississippi 38901
(662) 226-1161 ext. 113
dwilliams@GrenadaMfg.com

Proposed Corrective Measures for Grenada Manufacturing LCC

Description of Migration Control Measures

The corrective measures proposed for groundwater at the entire Site include source removal at contaminated areas, and the installation of a permeable reactive barrier [PRB] upgradient of Riverdale Creek. The permeable reactive barrier consists of a trench backfilled with a sand and granular iron mixture, and would address site-wide groundwater migration. It is a passive technology that would require minimal operation and maintenance. The objective of the PRB is to chemically reduce chlorinated organics and hexavalent chromium as groundwater passes through the barrier. The PRB would be installed across the saturated groundwater thickness to a depth of approximately 60 feet below ground surface and keyed into the underlying clay layer. The PRB will provide substantial mass or volume reduction of constituents of concern. Constituents in the dissolved phase would be treated and destroyed to below groundwater cleanup goals as groundwater passes through the PRB. The PRB will provide a line of defense between the plume and the receptor [Riverdale Creek] by controlling constituents' migration.

This corrective measure will offer protection of human health and the environment since potential exposure pathways and levels of risk would be greatly reduced by migration control measures and destruction of dissolved phase chlorinated organics and hexavalent chromium. The PRB design documentation shows that destruction of the chlorinated organics and hexavalent chromium in dissolved phase would be achieved, thus affecting cleanup standards, such as the Maximum Concentration Limits [MCLs] for drinking water, downgradient of the barrier.

The PRB construction activities will include excavation and dewatering of potentially contaminated soil. Excavated soil will be placed above grade on the upgradient side of the PRB to drain, then spread within a bermed area and covered with clean soil to minimize potential contact with environmental media. Decontamination of heavy equipment will be conducted within bermed areas, and wash water will be collected, treated as appropriate, and discharged according to Clean Water Act regulations.

Implementation of these corrective measures will immediately reduce the constituents' mobility and migration to receptors like Riverdale Creek. However, residual contamination between the PRB and Riverdale Creek will remain initially. With time, clean groundwater passing through the PRB, along with natural attenuation, will work to also cleanup the area between the PRB and the creek. PRB installation would not introduce unacceptable short-term risks since construction workers would be trained in health and safety, and personal protective equipment would be provided. Following Army Corps of Engineers guidelines and obtaining a construction permit for wetlands will minimize impacts to wetlands. A wetlands delineation study, an archaeological study, and a wildlife survey have already taken place (see below). The facility has agreed on mitigative measures with the Corps of Engineers for loss of wetlands due to excavation of the trench and building of the access road used to install the PRB and to sample the monitoring wells. These corrective measures will also provide long-term operation and permanence until the iron is no longer effective. The PRB may require rehabilitation or replacement of the iron filings at that time as part of operation and maintenance. In summary, the Permeable Reactive Barrier would control plume migration over the long term by destroying dissolved phase chlorinated organics and hexavalent chromium in situ.

The completed *Design Basis Report* for the PRB was transmitted to the USEPA and MDEQ in April 2003. The preliminary construction schedule included in the *Design Basis Report* currently indicates that construction is anticipated to commence in the summer of 2004. ArvinMeritor, (one of the responsible parties) on behalf of Grenada Manufacturing, obtained a permit from the US Army Corps of Engineers (USACOE) for construction of the PRB. Brown and Caldwell (BC) completed a wetlands survey for the project site and the findings were transmitted to the USACOE in August 2002. A Pre-Construction Notification for Nationwide Permit #38 was transmitted to the USACOE in

September 2002. As a result of this application, the Mississippi Department of Archives and History requested the conduct of a cultural resources survey of the project site. The survey has been completed and the report was transmitted to the agencies in July 2003. In general, no cultural resources were identified within the project area. The permit was issued by the USACOE in August 2003.

The USACOE also requested wetlands mitigation for the Site to address filling of a portion of the wetlands during construction of the PRB. ArvinMeritor prepared a Wetlands Mitigation Plan, which was transmitted to the agencies in March 2003.

At the request of the USEPA, ArvinMeritor also performed a field survey to verify two previous desktop reviews for threatened and endangered species. This field work has been completed and a letter was transmitted to the agencies in June 2003 reporting that no threatened or endangered species were identified in the area where the PRB is to be constructed.

The USEPA has requested specific performance monitoring requirements associated with the PRB. These requirements are addressed in the *Design Basis Report* for the PRB; specifically, in Appendix E Performance Monitoring Plan. Comments received from the USEPA on the *Design Basis Report* included revisions to the Performance Monitoring Plan. At the request of the USEPA, ArvinMeritor initiated the sampling efforts outlined in the Performance Monitoring Plan (with consideration given to the USEPA comments on the Plan). The initial efforts included installation of ten new groundwater monitoring wells, collection of site-wide groundwater samples, and collection of surface water and sediment samples from Riverdale Creek. A report summarizing this work is currently being prepared by Brown & Caldwell. In addition, as required by the USEPA, quarterly surface water sampling in Riverdale Creek will begin in February 2004.

Description of Source Control Measures

A number of significant source control measures have been previously implemented at the Site. These source control measures include the following:

Free-product recovery at AOCs A and B
Free-product recovery at MW-2 located adjacent to the Sludge Lagoon [SWMU 4]
Closure of the former Equalization Lagoon [SWMU 2]
Removal action at the On-Site Landfill [SWMU 3]
Ex-Situ Soil Vapor Extraction and Stabilization of the On-Site Landfill [SWMU 3]
Clean Closure of the Chrome Destruct Pit [SWMU 14]
Shutdown and Closure of the Chrome Plating Lines [SWMU 27]

Source control measures have provided obvious benefit at the Site; however, additional source control measures are appropriate at the Site. Identification and evaluation of these additional source control measures is further discussed later in this SB.

In accordance with the facility's Hazardous and Solid Waste Amendment [HSWA] Permit issued July 31, 1998, by EPA, the facility is undergoing HSWA Corrective Action for prior releases of hazardous waste, including hazardous constituents from various Solid Waste Management Units [SWMUs]. The RCRA Facility Assessment in 1997 identified 26 SWMUs and 3 Areas of Concern [AOCs]. Subsequently, one more SWMU, the Chrome Plating Line, was identified in 2002. See Figure 2 for names and locations of the priority SWMUs and AOCs at Grenada Manufacturing. These SWMUs and AOCs correspond to those listed in Appendix A for the corrective measures.

To that end, Interim Measures [IMs] for the Site were required by EPA Region 4 in year 2000. EPA requested that the facility immediately address site-wide groundwater contamination, as well as source removal and soil contamination for the highest priority SWMUs and AOCs. In year 2003, EPA called for a final Corrective Measures Study [CMS] that would encompass the corrective measures for the entire Site. The facility responded with a Corrective Measures Study report wherein the alternatives and the corrective measures for the entire Site were presented. This document is entitled: Corrective Measures Study Report Grenada Manufacturing, L.L.C. Grenada, Mississippi. It is available for public review; as are the RCRA Facility Assessment, the RCRA Facility Investigation Report and the Interim Measures Study Report.

The facility also has a RCRA permit for regulated units [RUs] from the Mississippi Department of Environmental Quality [MDEQ]. Earlier investigative and remedial work was conducted under an Administrative Order on Consent issued by MDEQ, and the RCRA permit. The HSWA permit builds on these earlier actions to put in place final corrective measures for the entire Site.

Description of Site Groundwater Quality and Monitoring

Various Volatile Organic Compounds [VOCs] have been detected in groundwater at the Site with Trichloroethene [TCE] and its daughter products [i.e., cis-1,2-dichloroethene [cis-1,2-DCE], 1,1-dichloroethene [1,1-DCE], and vinyl chloride [VC]], arsenic, lead, and chromium being the constituents of greatest potential concern. The extent of the TCE plume and its daughter products, as of October 2000, was delineated in the RFI Report. These plumes generally encompass the Main Plant area and extend down gradient and ultimately discharge to Riverdale Creek. The groundwater quality data show that impacts from various SWMUs and AOCs at the Site are commingled and become diffused in very close proximity to any given source. For example, tetrachloroethene, a

constituent of concern, was observed at relatively lower concentrations in areas under the Sludge Lagoon, Equalization Lagoon, On-Site Landfill, and in the vicinity of GP-4 near Riverdale Creek. In general, the other constituents of concern, such as toluene, 1,1,2-trichloroethane [TCA], and 1,2-dichloroethane [DCA], appear in the vicinity of the Main Plant area. The plumes for the inorganics appear to be limited to the area from the Main Plant to the On-Site Landfill; however, they do not appear to extend to Riverdale Creek. Additionally, sporadic detections of bis[2-ethyl-hexyl] phthalate have also been observed at isolated locations. Based on these historic data, the primary constituents of concern [particularly in the vicinity of Riverdale Creek] are TCE and its degradation products.

In addition to the previous Site-wide groundwater sampling for the RFI, there is ongoing groundwater monitoring in connection with the Equalization Lagoon [a regulated unit]. The semi-annual groundwater sampling and analysis around the lagoon is conducted in accordance with the facility's RCRA permit for the former Equalization Lagoon.

A Site-wide groundwater-sampling event was conducted in November 2003 in accordance with the Performance Monitoring Plan appended to the Design Basis Report for the PRB. The EPA approved the Performance Monitoring Plan in June, 2003. After the initial sampling or "baseline" event, all monitoring wells will be sampled biennially [once every two years] on a Site-wide basis. The Site-wide sampling events will supplement the existing groundwater quality database for the Site and also serve to monitor on-going interim and final corrective measures at the Site.

The Performance Monitoring Plan proposes fourteen [14] new monitoring wells to be installed to supplement the existing monitoring well network. The purpose of the additional monitoring wells is to provide supplemental groundwater quality and groundwater elevation monitoring in areas up gradient to, within, and downgradient of the PRB being evaluated for installation for Site-wide groundwater migration control. The wells will generally be installed as well couplets to allow for the monitoring of the upper and lower portions of the Upper Aquifer. Monitoring wells that are part of the performance monitoring for the PRB will be sampled and analyzed initially within one month of completion of the PRB installation and semi-annually afterwards.

Description of Vapor Intrusion Assessment Measures

At Grenada Manufacturing, the TCE and Toluene groundwater plumes travel underneath the northeast corner of the Main Plant Building. Grenada Manufacturing conducted a vapor intrusion assessment at the Main Plant Building located at the Site. This work was conducted to allow for the assessment of the potential for VOCs in the vapor state to enter the plant building from the soil and/or groundwater. Monitoring activities were performed in February 2003 under conditions thought to be conservative for these

purposes (i.e., minimal ventilation). Ten of the eleven VOCs reported were found either below their target indoor air screening concentration or below their detection limit. Only TCE was detected above its risk based target indoor air screening concentration. The current monitoring results do not exceed EPA's risk-based target levels. However, if current toxicity criteria change [the TCE criterion is currently under review, and may be lowered] then the current monitoring results may fall outside EPA's risk range, and remedial action may be warranted. However, it should be noted that EPA's risk-based target levels and the observed concentrations were well below OSHA occupational exposure health and safety standards.

Description of SWMUs and AOCs

The Future Action Status of all SWMUs and AOCs at the facility is listed in Appendix A of this document.

Summary of Site Risk

A Remedial Investigation [RI] completed in January 1994 identified the presence of trichloroethylene [TCE] and its degradation products, as well toluene and chromium in the soil and groundwater at the Site. A Baseline Risk Assessment was performed for soil and upper-site groundwater as part of the Supplemental RI Report prepared in March 1994. The Baseline Risk Assessment provided an evaluation of the potential threat to human health and the environment from the constituents of interest at the Site. The risk assessment identifies the constituents of interest and, through the exposure and toxicity assessments, characterizes the associated potential risk, assuming no action is taken at the Site. The Baseline Risk Assessment concluded that the Site poses only potential "low-level" threats for all media except for groundwater in the uppermost aquifer. The primary concern with respect affected groundwater is the migration of chlorinated ethenes and ethanes to Riverdale Creek on the west side of the Site. Toluene and chromium are also of concern, but are present at much lower concentrations than are the chlorinated VOCs and do not threaten Riverdale Creek.

The proposed corrective measures call for baseline monitoring and operational monitoring of corrective measures for constituents of concern. If offsite human health or ecological threats are detected or suspected in Riverdale Creek, EPA may require the facility to conduct human health and/or ecological risk assessments and/or meet appropriate surface water and sediment screening criteria.

Cleanup Goals

The following cleanup criteria and for various media have been adopted by Grenada Manufacturing during the remedy selection process:

Groundwater	Maximum Contaminant Levels (MCLs) and Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
Soil	Site Specific Risk-Based action levels calculated by Brown and Caldwell and USEPA Region 9 Preliminary Remediation Goals
Sediment	Site-Specific Risk-Based action levels calculated by Brown and Caldwell and National Oceanic Atmospheric Association screening levels
Surface Water	Site-Specific Risk-Based action levels calculated by Brown and Caldwell, Mississippi Water Quality Criteria, and Federal Water Quality Criteria.

The following tables list the Chemicals of Concern in Soil and Groundwater, the cleanup and remediation goals, and the highest observed level of each Chemical of Concern.

There are no tables shown for Sediment and Surface Water because significant contamination of sediment and surface water at the Site has not been observed.

Table 1.a. Groundwater CLEANUP GOALS-Chemicals of Concern in Groundwater

	Regulatory Standard MCL [µg/L]	Highest Level At Site [µg/L]
Arsenic	50	64[1]
Chromium	100	7,220[1]
Lead	15	43[1]
Benzene	5	9[1]
Bis[2-ethyl-hexyl] Phthalate	6	7[1]
1,2-Dichloroethane	5	44[1]
1,1-Dichloroethylene	7	99[1]
cis-1,2-Dichloroethylene	70	240,000[1]
Tetrachloroethylene	5	290[1]
Toluene	1,000	2,200[1]
1,1,2-Trichloroethane	5	76[1]
Trichloreothylene	5	650,000[1]
Vinyl Chloride	2	6,600[1]

While the USEPA's groundwater protection and cleanup strategy for RCRA Corrective Action calls for progress toward the ultimate goal of returning impacted groundwater to its maximum beneficial use, the Agency also recognizes that restoration to drinking water quality may not always be achievable. Site and contaminant characteristics and the limitations of available remediation technologies will make restoration to drinking water standards an extremely challenging situation at this Site.

Table 1.b. SOIL CLEANUP GOALS-Chemicals of Concern in Soil

	Region IX Preliminary Remediation Goal Industrial Soil [mg/kg]	Highest Level At Site [mg/kg]
Arsenic	1.6	24.7
Chromium (III)	100,000	7,770[2]
Chromium (VI)	64	2,680[2]
Lead	750	110[3]
Benzene;	1.3	3.0[3]
Bis[2-ethyl-hexyl] Phthalate	120	not available
1,2-Dichloroethane	0.6	not available
1,1-Dichloreothylene	410	not available
1,2-dichloroethylene (cis)	150	64[3]
Tetrachloroethylene	3.4	11[3]
Toluene	520	84[3]

1,1,2-Trichloroethane	1.6	2.3[3]
Trichloroethylene	0.11	5,400[3]
Vinyl Chloride	0.75	13[3]

[1.] RCRA Facility Investigation Report prepared for Grenada Manufacturing Facility, Grenada Mississippi, January 2001, Revised October 2001.

[2.] Assessment Report and Closure Plan for the Chrome Plating Line Area, Grenada Manufacturing, LLC Facility, Grenada Mississippi, January 2003.

[3.] Remedial Investigation Report, Randall Textron Plant Site, Grenada, Mississippi; Baseline Risk Assessment, January 1994

Constituent concentrations in soil in many areas of the Site, including those in the saturated zone, exceed one or more of these RPGs, particularly chromium. Treatment or removing these soils to attempt to meet the PRGs may not be practicable with available remediation technologies. Therefore, institutional controls are being implemented at the Site in addition to engineering controls, in order to address these concerns.

Based on the results of the various investigations and assessments performed at this Site, the following principal objectives were recommended in the CMS for corrective action at this site:

- Implement corrective measures which are protective of human health and the environment, based upon current potential exposures.
- For affected groundwater, which has migrated beyond the facility boundry (i.e., downgradient from the PRB), clean up to Mississippi groundwater quality standards.
- Prevent further degradation of soil and groundwater with appropriate source control corrective measures. Utilize the PRB as a site-wide migration control measure.
- Comply with standards for management of waste during corrective measure implementation.
- Develop and implement use restrictions/institutional controls for Site soil and groundwater to prevent future exposures.
- Implement the approved Performance Monitoring Plan to track the progress of the corrective action program.

Evaluation of Corrective Measures

Thirteen corrective measures technology options were identified in the Corrective Measures Study as potential remedies for the Site. The identified components, however, may only address certain site-specific areas [e.g., individual SWMUs or source areas, soil in the vadose zone, and site-wide groundwater]. The components were assembled in this manner to allow for more flexibility in selecting the corrective measures. The final selected corrective measures may be a combination of one or more of the components identified below.

No Further Action
Use Restrictions
Stabilization
Cover/Capping System
Sheet Pile Barrier
Permeable Reactive Barrier
Recirculating Wells Curtain
Non Aqueous Phase Liquid Identification/Recovery
Excavation and Off-Site Disposal
Excavation and On-Site Treatment with Soil Vapor Extraction
Excavation and On-Site Treatment with Low Temperature Thermal Desorption
In-Situ High Vacuum Multi phase Extraction
Natural Attenuation

The evaluation factors considered in the analysis of the corrective measures technologies are discussed in detail in the Corrective Measures Study Report dated August 2003. This report is available electronically. All thirteen alternatives were evaluated individually and compared to one another for each criterion in the required comparative analysis format.

Overall protection of human health and the environment, attainment of cleanup standards, control of sources of releases, and compliance with applicable standards for management of wastes are the key determinants for selection of an evaluated remedial component as a recommended Site corrective measure. The other criteria [long-term reliability and permanence; reduction of toxicity, mobility, or volume; short-term effectiveness; practicality; cost; community acceptance; and state acceptance] require consideration due to potential tradeoffs that may exist among the components.

Final Remedy Selection

Based on the results of the CMS, the recommended corrective measures for this Site are:

1. Additional Non Aqueous Phase Liquid Recovery at AOCs A and B and the Sludge Lagoon.
2. Construction of a high vacuum multi-phase extraction system at AOCs A and B.
3. Installation of a Sheet Pile Barrier up gradient of AOCs A and B.
4. Closure of the Sludge Lagoon using stabilization of the sludge and capping or covering of the remaining impacted soil.
5. Installation of a Permeable Reactive Barrier down gradient of the constituent plume.
6. Implementation of select Institutional Controls for the Site.

Site specific pre-design data will be collected to address items 1 to 4. As this data becomes available,further evaluation of each option will be performed. Technical Details of the Permeable Reactive Barrier can be found in the Design Basis Report dated May 2001 and revised April 2003.

Public Participation

The facility should add the public participation plan here.

Bibliography

1. Remedial Investigation of the Randall Textron Automotive Company, Grenada Mississippi, EPA ID Number MSD 007037278, January 1994.

2. RCRA Facility Assessment of Randall Textron, Grenada Mississippi, EPA ID Number MSD 007037278, October 1997.

3. HSWA Portion of the RCRA Permit, Textron Automotive Company, 635 Highway 332, Grenada Mississippi, EPA ID Number MSD 007037278, July 31, 1998.

4. RCRA Facility Investigation Report prepared for Grenada Manufacturing Facility, Grenada Mississippi, EPA ID Number MSD 007037278, January 2001, Revised October 2001.

5. Design Basis Report: Permeable Reactive Barrier Groundwater Interim Measure, Grenada Manufacturing Site, EPA ID Number MSD 007037278, Grenada Mississippi, May 2001, Revised April 2003.

6. Assessment Report and Closure Plan for the Chrome Plating Line Area, Grenada Manufacturing, LLC Facility, EPA ID Number MSD 007037278, Grenada Mississippi, January 2003.

7. Draft Indoor Air Monitoring Report, Grenada Manufacturing Site, Grenada Mississippi,
EPA ID Number MSD 007037278, April 2003.

8. Corrective Measures Study, Grenada Manufacturing LLC, EPA ID Number MSD 007037278, Grenada Mississippi, August 2003.